

AUSTRALIAN AND TASMANIAN *PSELAPHIDÆ*.

BY ARTHUR M. LEA.

(Plate xxi.)

*Pselaphidæ* are numerous in Australia and Tasmania, and fortunately most of the known species have been well described, or the types are in Australia. So that Australian workers having access to the Australian Museum in Sydney, where, with a few exceptions, the types of King and Macleay are to be found, are much more fortunately placed than with other families, in which so many species have been referred to genera apparently at random, the types lost, or at least their locations unknown, and many of the original descriptions bad or even worthless. Very fortunately also the main worker at the family, M. Raffray, has, in addition to many species described by himself, redescribed many other species, of which he has the types, cotypes, or authenticated specimens, and has beautifully figured many.

Despite the highly distinctive features of many of the genera, the family is a very difficult one to deal with, and in most instances specimens must be set out so that all parts of the under surface and appendages (even the palpi) are clearly visible, and this is by no means easy with such minute insects. Consequently, although much interested in them, it was only with great reluctance that I determined to work out the species of my collection; and had it not been that so many occur in nests of ants and termites, I would not have done so at all, or at least not till after a re-examination of King's and Macleay's types.

For purposes of publication, the species have been divided into two groups, the descriptions of those occurring with ants and termites being sent for publication by the Royal Society of

Victoria, in a paper specially dealing with such inquilines of all families of beetles, the others being given here.\*

So far as the family is concerned, I am, however, rather fortunately placed, having taken numerous species, and often with abundance of individuals, at floods in many parts of Australia, on fence-tops and similar situations at dusk, in nests of ants and termites, and, especially from Tasmania, in mosses, tussocks, and fallen leaves.† Many correspondents have sent me specimens and have even, unsolicited, given me their unique examples. In 1900, M. Raffray published, in these Proceedings, descriptions of many species, the types of which were received from me; and, whilst preparing that paper, he gave me names for many species previously described by himself or other entomologists, many of these names not being mentioned in the paper referred to. Shortly after King's types were acquired by the Australian Museum, I examined the whole of them;‡ and, in exchange for other insects, received many cotypes. At the time, however, I had not paid special attention to the *Pselaphidæ*, although I had many species for comparison with the types, and often from the same or neighbouring localities; and it is probable (in some cases, unfortunately, certain) that specimens appearing in his collection as belonging to but one species, really belonged to two or more. King seldom described the legs, and apparently never examined the ventral segments and metasternum, in which so many remarkable features exist in the males, and which alone quite easily dis-

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\* A few species of obscure (probably new) genera, and many females have been left untouched.

† Mosses, tussocks, and fallen leaves have practically been unexamined for *Pselaphidæ* and other small beetles in Queensland, South and West Australia, and very little has been done at them in New South Wales and Victoria.

‡ All families; unfortunately, however, some of the types were represented by labels only, the insects themselves probably having been eaten by *Psocæ* or other vermin, the *Anthicidæ*, perhaps, being the most unfortunate in this respect.

tinguish species that superficially strongly resemble each other.\* In consequence, I obtained and sent to M. Raffray as cotypes, either for his own collection or for examination, a few species of which the correctness of determination is doubtful.† But it is quite certain that such species extremely closely resemble the species they were supposed to be, on the upper surface.

King's types, in fact, need to be carefully examined and redescribed, with especial reference to the under surface and the sexual characters. A few of his types are in the Howitt Collection, and these, by the courtesy of Mr. Jas. A. Kershaw, of the National Museum, I was able to examine and to redescribe. Some of Macleay's species also need redescription.

In descriptions the sex, if possible, should always be noted; and there are but very few species in which the males do not possess some distinctive features in the antennæ, legs, metasternum, or ventral segments.

Many of our species were originally referred to genera that now M. Raffray regards as being entirely absent from Australia, so that generic transfers are frequent, as unfortunately they are in so many other families.

SAGOLA TASMANIÆ, n.sp. (Plate xxi., fig.1).

♂. Reddish-castaneous, elytra and legs slightly paler; palpi and tarsi flavous. Clothed with moderately long and somewhat yellowish pubescence.

*Head* rather small; with a deep longitudinal impression. Eyes very prominent. Antennæ passing base of prothorax, first joint cylindrical, slightly longer than second and third combined, these somewhat rounded, second larger than third, fourth to tenth trapeziform, ninth slightly wider than eighth, tenth slightly

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\* I believe it to be impossible to point out distinguishing features in the females of certain species of *Eupines*, *Ctenisophus*, and perhaps of a few other genera that will enable coworkers to correctly identify such females, in species that are quite easily distinguished by masculine characters.

† M. Raffray has commented on these.

shorter and wider than ninth, eleventh briefly ovate, distinctly shorter than the two preceding combined. *Prothorax* distinctly wider than head, sides strongly rounded and widest slightly in advance of middle, with a deep narrow impression near base, marked by three foveate expansions, of which the median one is the largest. *Elytra* slightly longer than wide, sides feebly rounded; each with a small fovea at base of subsutural stria, and another slightly behind it; dorsal stria represented by two foveæ—a small one at base, and a longer one behind it; a round fovea at base between dorsal and subsutural striæ; with fairly numerous but rather indistinct punctures. *Abdomen* distinctly longer than elytra, sides slightly dilated to fourth segment, which is largest of all; under surface with a small fovea in middle of third segment, and a considerably larger one common to the fourth and fifth. *Metasternum* strongly convex. Hind *trochanters* strongly but obtusely dentate. Length  $2.2\frac{1}{4}$  mm.

♀. Differs in having the head smaller, antennæ shorter and thinner, abdomen feebly convex along middle of under surface, and hind trochanters unarmed. Length  $1\frac{2}{3}$  mm.

*Hab.*—Tasmania: New Norfolk, Mount Wellington; in moss (A. M. Lea).

I have referred this species to *Sagola*, as it agrees well with Sharp's original diagnosis of that genus\* except that the mesosternum is not elongate, but almost certainly the word "mesosternum" was accidentally used for "metasternum," as Raffray says "Metasternum magnum." The genus is abundantly represented in New Zealand, but is now first recorded from any part of Australia. Of the species figured by Raffray,† it appears to be closest to *S. punctulata*. The only New Zealand species actually known to me is *S. immota*‡ (given by Raffray as a synonym of *S. laminata*) which is somewhat wider, head different

\* I have not, however, dissected out the mouth-parts.

† Rev. d'Ent. 1893, Plate i.

‡ For a specimen of which I am indebted to Major Broun.



between antennæ, medio-basal fovea of prothorax considerably larger, and elytral foveæ somewhat differently placed.

The three apical joints of the antennæ are certainly wider than the others, but the difference is so trifling that the antennæ could fairly be regarded as being without a club. The middle tibiæ are separated by a very narrow keel. The only female before me is probably immature, as it is almost entirely flavous.

LIMONIATES QUADRATIPENNIS, n.sp.

♂. Reddish-castaneous, abdomen (except margins and tip) somewhat darker, appendages paler. Clothed with rather short, pale pubescence, fairly dense but sparser on prothorax than elsewhere.

*Head* distinctly notched in middle of base; with a round fovea near each eye, closed posteriorly but open in front. Antennæ short and stout, second joint subglobular, third to ninth distinctly transverse, tenth larger and widely transverse, eleventh large and briefly ovate. *Prothorax* distinctly wider than head, widest slightly in front of middle; with a strong subbasal impression, somewhat dilated in middle, and on each side expanded into a large and somewhat irregular fovea; a small impression on each side of middle at extreme base; median line very faint. *Elytra* about as long as wide, sides very feebly rounded, angles feebly rounded; with eight minute basal foveæ; dorsal striæ traceable only on basal third; with numerous punctures. *Metasternum* deeply notched at apex. *Abdomen* gently flattened about middle, near base, on under surface. *Legs* moderately stout. Length  $1\frac{1}{6}$  mm.

*Hab.*—Tasmania: Hobart, New Norfolk; three specimens from moss(A. M. Lea).

Much larger than *L. australis*, club stouter, and prothoracic impressions rather more distinct.

On one of the specimens the head is slightly darker than the prothorax. The antennæ, at a glance, appear to have the club one-jointed, although the tenth is almost as wide as the eleventh.

## LIMONIATES SUBTERRANEUS King.\*

Pale castaneous, appendages almost flavous. Sparsely pubescent.

*Head* shallowly notched in middle of base, but with a short deep impression starting from its middle; with two distinct foveæ on each side, of which the interocular ones are the larger, the pairs feebly connected longitudinally but not transversely. *Antennæ* scarcely extending to apical third of prothorax, eleventh joint large, briefly ovate, and much wider than tenth, which is transverse. *Prothorax* not much wider than head, widest at about apical third; near base with a strong impression, which is expanded into three foveæ of almost equal size (but not shape), one in middle and one on each side; median line absent. *Elytra* with dorsal striæ deeper and slightly longer, and the punctures less conspicuous, but otherwise as in the preceding species. *Metasternum* rather deeply notched at apex. *Abdomen* feebly flattened along middle of under surface. *Legs* moderately stout. Length  $\frac{4}{5}$  mm.

*Hab.*—New South Wales.

The specimen described is probably a male, and was received from the late Rev. R. L. King's Collection as *Euplectus subterraneus*; and on comparing it with the type it was found to be correctly named, but I cannot find the least trace of a median line in front of the transverse subbasal impression; whereas King says "thorace . . . fovea elongata media antica." It is rather narrower, paler, and more depressed than the preceding species, clothing sparser, less narrowed in front, and impressions both on head and prothorax more distinct.

From some directions, the lateral foveæ of the head appear to form two deep grooves, and, with the medio-basal longitudinal impression, to be very distinct.

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\* As King's description of this species is both short and misleading, a fuller one should be of use.

## LIMONIATES VENTRALIS, n.sp.

♂. Reddish-castaneous, elytra slightly paler, appendages distinctly paler, abdomen and metasternum darker, sometimes almost black. With very short, pale pubescence.

*Head* (including mandibles) distinctly transverse; base feebly notched, middle feebly longitudinally ridged; with a shallow depression, but not foveate, on each side of ridge. Antennæ passing middle of prothorax, eleventh joint large, briefly ovate and decidedly wider than tenth, which is distinctly transverse. *Prothorax* feebly transverse, scarcely, if at all, wider than head; with traces of a median line only near base, each side of middle near base with an impressed line dilating towards the side; with numerous and small but fairly distinct punctures. *Elytra* not as long as wide, sides and shoulders rather strongly rounded; with four small basal foveæ; dorsal striæ lightly curved, deep at base and traceable almost to apex; punctures rather more distinct than on prothorax. *Metasternum* strongly sulcate along middle from base to apex. Lower surface of *abdomen* with a longitudinal impression about the length of metasternum, the impression almost filled by a ridge covered with fine golden setæ; apical segment with a feeble fovea. *Legs* moderately long; femora stout; four hind tibiæ spinose at apex. Length  $\frac{3}{4}$ - $\frac{4}{5}$  mm.

♀. Differs in having metasternum feebly impressed and only posteriorly, abdomen simple and tibiæ unarmed.

*Hab.*—W. Australia: Vasse River; numerous specimens in flood-débris (A. M. Lea).

It is with some doubt that this species is referred to *Limoniates*, as the impressions of the head and prothorax are so different from those of the other species known to me; but the curious metasternum and abdomen of the male render the species remarkably distinct.

## MACROPLECTUS QUADRIFOVEATUS, n.sp.

♂. Reddish-castaneous. With rather dense, fine, pale pubescence.

*Head* rather large; with a large fovea on each side of middle

near base, the foveæ rounded and closed posteriorly, but narrowed and continued in front, the interspace distinctly raised. Antennæ with first joint subcylindrical and almost as long as second to fourth combined, second subglobular, distinctly longer than third, third to eighth small and more or less feebly transverse, ninth somewhat larger, tenth slightly larger still, and, with the ninth, subtrapeziform, eleventh elongate-subovate, about as long as eighth to tenth combined. *Prothorax* slightly wider than head, and, excluding the neck, slightly longer, rather strongly dilated towards apex; each side near base with a large fovea, the middle also foveate, the three foveæ connected by curved lines; median line very feeble; with small and rather sparse punctures. *Elytra* almost as long as wide, rather narrow at the base, and dilated posteriorly, apex gently incurved to middle: subsutural stria rather deeply impressed, its base foveate; a fovea on each side marking base of the (otherwise absent) dorsal stria; with fairly numerous punctures. Upper surface of *abdomen* with second segment almost twice as long as third, third distinctly longer than fourth; lower surface with second strongly convex in middle, the three following depressed and narrow across middle. *Metasternum* gently flattened in middle. *Legs* unarmed. Length 2 mm.

*Hab.*—Victoria(?)\*

Differs from *M. tasmanicus*, which in general appearance it strongly resembles, by the abdomen longer than elytra, with the segments very differently proportioned, and the elytral punctures less pronounced. From the description of *M. calcaratus* in the unarmed front tibiae. *M. cephalotes* is described as having a much larger head, etc. The prothorax at first appears to be without a median line, but from some directions a rather faint one can be seen.

Three specimens from moss, at Waratah (Tasmania), are probably females of this species; they differ in having the head

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\* The two males before me are probably from Victoria; they were sent from the National Museum as from the Collection of C. French.

slightly smaller, with its impressions smaller, the antennæ shorter, with the club smaller, and the apex of the last joint less produced; and the second ventral segment regularly convex in middle.

MACROPLECTUS OCTOFOVEATUS, n.sp.

♂. Reddish-castaneous. With moderately dense, fine, pale pubescence.

*Head* with a round fovea on each side of middle towards base, the foveæ open in front, with the impressions connected between antennæ; the interspace somewhat angular. *Antennæ* somewhat shorter than in the preceding species. *Prothorax* very little wider than head, and about as long, sides about apex rather strongly inflated; each side near base with a large fovea, from each of which a curved line connects with a medio-basal impression, leaving two basal lobes, each of which has a small fovea; median line narrow and deep at base, but not traceable to middle; punctures very small. *Elytra* about as long as wide, each feebly separately rounded at apex, sides very little dilated posteriorly; subsutural stria very distinct, its base commencing in a small fovea; two small foveæ on each side representing the base of the dorsal stria, and another small one between these and the one close to suture; punctures numerous and small, but distinct. Upper surface of *abdomen* with second segment slightly shorter than third, fourth the length of third, but slightly narrower, and slightly longer and wider than fifth; under surface with third slightly shorter than second, and slightly longer than fourth. *Metasternum* very feebly impressed in middle. *Hind trochanters* obtusely dentate. Length  $1\frac{1}{2}$ - $1\frac{3}{4}$  mm.

♀. Differs in having the antennæ slightly shorter; metasternum not at all depressed in middle, and trochanters unarmed.

*Hab.*—Tasmania: Mount Wellington, Hobart; in moss (A. M. Lea).

In general appearance close to the preceding species, but elytra with eight small basal foveæ (a character which will distinguish it from all previously described species of the genus). The

cephalic foveæ are also smaller, with the result that the interspace is distinctly wider. The antennæ are shorter, with the joints of the male much as in the female of that species, whilst those of the female are still shorter, with the eleventh joint more ovate; the elytra and abdomen are also of different shape.

The place where the transverse and longitudinal impressions of the prothorax cross, whilst very distinct, is scarcely inflated so as to become foveate; from some directions the extreme base appears to have five small foveæ. The dorsal stria from most directions appears to be absent, but from others very vague geminate ones can be seen proceeding for a short distance from the basal foveæ. The apical ventral segment of the male has some curious appendages, but these appear to be protrusible; in the female that segment is flattened at its apex.

MACROPLECTUS SEXFOVEATUS, n.sp.

Reddish-castaneous, abdomen slightly darker, appendages slightly paler. With rather dense, fine, pale pubescence.

*Head* more convex than usual, but vaguely depressed along middle; each side of middle towards base with a distinct fovea, closed behind but widely and shallowly open in front, the two not connected between antennæ, owing to the antennary tubercles being rather longer than usual. Eyes very small. Antennæ with first joint from some directions appearing not much longer than second, but really almost twice as long, second slightly dilated to apex and distinctly longer than third, third slightly longer than fourth, fourth to eighth very small, ninth slightly larger, the tenth slightly larger still, eleventh subovate, but rather strongly pointed, and about as long as eighth to tenth combined. *Prothorax* slightly transverse, distinctly wider than head, and, excluding the neck, slightly longer; sides dilated near apex; with a deep and almost straight impression close to base, and feebly dilated on each side; median line very feebly impressed; a moderately distinct longitudinal impression on each side, becoming deep near basal impression; with numerous very small punctures. *Elytra* convex, almost as long as wide, sides some-

what inflated in middle, apex almost straight; subsutural stria fairly deep, its base commencing in a small fovea; dorsal stria fine and traceable almost to middle, a small fovea at its base, and another between it and the shoulder; punctures indistinct. Upper surface of *abdomen* with third segment a trifle longer than second or fourth; lower surface feebly flattened in middle, second, third, and fourth segments of about equal length in middle, the fifth very short. Hind *trochanters* obtusely dentate. Length  $1\frac{2}{3}$  mm.

*Hab.*—Tasmania : Mount Wellington; in moss(A. M. Lea).

When viewed from the sides, the head appears to be feebly tuberculate immediately above the subbasal foveæ. The ninth and tenth joints, although larger than the eighth, are still very small, so that the club appears to consist of one joint only, and that not a very large one. The subbasal impressions of the prothorax are very different from those of the two preceding species.

The only specimen before me appears to be a male, as its hind trochanters are armed, but the metasternum is rather strongly convex. The tip of the second ventral segment is minutely emarginate on each side of the middle, in consequence of which the middle itself appears to be slightly produced; but this appearance is very indistinct from most directions.

#### EUPLECTOPS CARINATIFRONS, n.sp.

♂. Reddish-castaneous, appendages and most of elytra somewhat paler. Clothed with distinct, but not very dense, pale pubescence, and with a few longer hairs scattered about.

*Head* with a deep curved impression, each end of which appears as a strong fovea close to each eye, middle of base obtusely notched, space between antennæ raised in the form of a stout, slightly curved carina. Antennæ with two basal joints fairly large, third slightly longer than wide, ninth and tenth moderately large, eleventh subovate, base truncate, apex slightly produced, almost the length of three preceding joints combined. *Prothorax* about as wide as long, widest about middle, sides strongly but evenly rounded to apex but irregularly narrowed to base; with a



deep transverse impression close to base, and distinctly inflated where the longitudinal impressions traverse it; of these the median one is narrow but deep, and not quite continuous to base or apex, and the lateral ones are shorter, deeper, and wider. *Elytra* about as long as wide; base with eight small foveæ; with fairly numerous and small, but distinct, punctures, discal striæ distinct at base, but not very deep elsewhere, and terminated about one-third from apex. Upper surface of *abdomen* with a very feeble medio-basal node, with a very feeble stria on each side of same; lower surface somewhat flattened along middle, and with a shallow impression on apical segment. *Metasternum* rather shallowly impressed along middle. Front *trochanters* obtusely dentate. Length  $1\frac{3}{4}$  mm.

*Hab.*—Tasmania: Frankford (A. M. Lea).

In size and general appearance resembling *E. excisus*, but head differently sculptured, and prothorax rather narrower, with shallower impressions.

From some directions there appear to be two distinct antennary tubercles, but from others the bases of the antennæ are seen to be connected by a distinct curved carina. From some directions the head appears to have three large foveæ of almost even size, and the interocular foveæ to be completely isolated, but from others all the large impressions are seen to be connected. The fifth joint is slightly larger than the fourth or sixth. Owing to the impressions the base of the prothorax appears to be in two distinct lobes.

#### EUPLECTOPS CASTOR, n.sp.

♂. Reddish-castaneous, appendages and most of the elytra somewhat paler. Moderately and almost uniformly clothed with rather long, pale pubescence, and with a few longer hairs scattered about.

*Head* with a strong curved impression, each end of which appears as a strong fovea close to the eye, base obtusely notched in middle, antennary tubercles oblique and rather strong. Antennæ rather short and stout, second joint about as long as

wide, and the width of first, third to eighth small and transverse, ninth larger, tenth trapeziform, eleventh truncate-ovate, apex evenly rounded. *Prothorax* slightly wider than long, sides rather suddenly inflated about middle, impressions somewhat as in preceding species. *Elytra* about as long as wide, distinctly convex, basal foveæ rather shallow, with numerous fairly distinct punctures, dorsal striæ distinct, but not continuous to apex. Upper surface of *abdomen* with medio-basal node and striæ feeble; lower surface flattened along middle. *Metasternum* foveate in middle, and just behind each middle coxa. Front *trochanters* very obtusely dentate. Length  $1\frac{1}{3}$ - $1\frac{1}{2}$  mm.

♀. Differs in having somewhat thinner antennæ, head slightly narrower, with impressions shallower, abdomen more convex along middle of under surface, metasternum with median fovea much less distinct, and the postcoxal ones almost absent.

*Hab.*—Tasmania: Mount Wellington, in moss; Stanley, in tussocks at summit of "Nut"; Launceston, Bruny Island, Huon River (A. M. Lea).

More robust and convex than *E. sculptus*, antennæ shorter and stouter, etc. The prothorax is more convex and rather wider than in the preceding species, and the impressions are rather wider, with the foveate expansions of the basal one larger, but the pubescence somewhat interferes with the clearness of the same, whilst it does not do so in the former.

A male from Mount Wellington has the meso- and metasternum quite black, but it appears to be only a variety.

#### EUPLECTOPS POLLUX, n.sp.

♂. Reddish-castaneous, appendages and most of elytra somewhat paler. Rather densely clothed with short, pale pubescence.

*Head* with a strong curved impression, narrow in front, and each end appearing as a strong fovea close to the eye, the interspace rather narrow, base obtusely notched, antennæ connected by a distinctly raised, curved carina. Antennæ with second joint rather stout, third slightly longer than wide, fourth to eighth transverse, ninth and tenth somewhat larger,

eleventh briefly truncate-ovate, apex feebly produced. *Prothorax* about as long as wide, widest across apical third, thence strongly narrowed to apex and arcuate to base; with a strong transverse impression close to base; with three deep longitudinal impressions, of which the median one is narrower than the others, and is not quite continuous to apex. *Elytra* about as long as wide, sides moderately rounded; with eight small basal foveæ and with rather small and fairly numerous punctures; dorsal striae distinct on basal half, but vanishing posteriorly. Upper surface of *abdomen* with medio-basal node feeble, and striae very indistinct; lower surface slightly flattened along middle. *Metasternum* feebly impressed along middle. Front *trochanters* obtusely dentate. Length  $1\frac{2}{3}$  mm.

♀. Differs in being somewhat thinner, antennæ thinner with the club smaller, cephalic impressions less deep, metasternum and abdomen convex along middle, and trochanters unarmed.

*Hab.*—Tasmania: Mount Wellington, in moss; Launceston (A. M. Lea).

Close to the preceding species, but antennæ slightly thinner, prothorax less strongly impressed, and metasternum different. The head is more deeply impressed than in *E. sculptus*, and the base of prothorax is different.

On the sides there are a few long hairs scattered about, but they appear to be entirely absent from the upper surface. The base of the prothorax appears to be in two lobes, but the sub-basal impression, although somewhat dilated where the longitudinal ones traverse it, is almost straight. On the only male before me, there is a broad flange-like process proceeding from near the base of the fifth ventral segment, and very distinct from the side; it is probably the sheath of the penis.

#### EUPLECTOPS DISCOPALLIDUS, n.sp.

♂. Of a rather pale reddish-castaneous, appendages and most of elytra somewhat paler. Clothed with rather sparse, pale pubescence, interspersed with fairly numerous longer hairs.

*Head* with a deep and strongly curved impression, the ends of which appear as strong interocular foveæ; base obtusely notched; antennæ connected by a curved carina. Antennæ comparatively thin, second joint fairly stout but slightly longer than wide, third to eighth small, ninth and tenth larger and more transverse, eleventh briefly ovate. *Prothorax* about as long as wide, sides strongly and, for the genus, evenly rounded; with a strong transverse impression close to base, and with three longitudinal ones; of these the median one is narrow and rather short, and does not traverse the basal impression; the lateral ones are wider, and each terminates in a shallow, foveate expansion of the basal impression. *Elytra* as in preceding species, except that the dorsal striae are distinct for a greater distance. Upper surface of *abdomen* with two very short basal carinæ; lower surface slightly flattened along middle. *Metasternum* shallowly impressed posteriorly. Front *trochanters* obtusely armed. Length  $1\frac{1}{3}$ - $1\frac{1}{2}$  mm.

*Hab.*—West Australia : Karridale (A. M. Lea).

In appearance close to *Plectusodes breviceps*, but apical joint stouter, prothorax more convex and narrower, with basal impressions more pronounced and of somewhat different shape. It is fairly close to the description of *Aulaxus rugicollis*, but elytra with more than four basal impressions, metasternum not piceous, and prothorax with the median line almost closed posteriorly. The median line is distinct in front, but narrowed behind, and scarcely visibly connected with the subbasal impression, a character which readily distinguishes it from most species of the allied genera.

The curved impression on the head is comparatively narrow in front, so that from some directions the interspace appears to be actually connected with the frontal carina. The club is rather small, the eleventh joint is no longer than the two preceding combined, and is scarcely produced at apex, but, owing to having rather numerous apical hairs, appears at a glance to be somewhat longer. The medio-basal abdominal node, if present on the types, is entirely concealed.



## EUPLECTOPS CONICICORNIS, n.sp.

♂. Reddish-castaneous, appendages somewhat paler. Moderately densely clothed with pale pubescence, interspersed with numerous longer hairs.

*Head* with a strong curved impression, the ends of which are close to the eyes, base longitudinally impressed, antennary tubercles oblique and distinct. Antennæ with second joint slightly thinner and shorter than first, ninth moderately, tenth more strongly transverse, eleventh as long as the four preceding joints combined, base truncate, apex rather strongly produced. *Prothorax* rather strongly convex; with a straight, deep, and rather wide impression close to base; with three longitudinal ones, of which the median one is narrow and continuous to base, but not to apex; the lateral ones for portion of their length are rather shallow, but each terminates in a foveate expansion of the basal impression; with fairly numerous and small, but quite distinct punctures. *Elytra* rather strongly convex; with eight small basal foveæ; dorsal striæ extending almost to apex, but very indistinct posteriorly; with fairly numerous punctures. Upper surface of *abdomen* with two very short oblique basal carinæ, node apparently absent; lower surface scarcely flattened along middle. *Metasternum* shallowly subfoveate in middle. Front *trochanters* obtusely armed. Length 1-1½ mm.

♀. Differs in having the club somewhat smaller, cephalic impressions less pronounced, metasternum and abdomen convex along middle, and trochanters unarmed.

*Hab.*—Tasmania: Hobart, in moss; Mount Wellington, in moss and fallen leaves(A. M. Lea).

The antennæ have the terminal joint distinctly longer and more pointed than in *E. Odewahnii*, the clothing is longer, elytra more convex, and legs thinner. It is somewhat smaller than the preceding species, the antennæ more pointed, and clothing longer and denser. In general appearance, except as to size, it is much like *Protoplectus pubescens*.

The median impression on the base of the head is connected with the strong curved one, so that from some directions its basal

parts appear in two almost semicircular lobes. On an occasional specimen the eleventh joint appears as a rather elongated triangle, its apex is strongly produced, in the male especially, and as it is usually terminated by a pencil of hairs, it appears to be considerably longer than it really is. The subsutural striæ are rather less distinct than usual.

EUPLECTOPS BRYOPHILUS, n.sp.

♂. Pale reddish-castaneous, appendages somewhat paler. Moderately densely clothed with rather long, pale pubescence, with a few longer hairs scattered about.

*Head* with a deep curved impression, the ends of which appear as interocular foveæ, base obtusely notched; antennary tubercles fairly large but obtuse. Antennæ as in the preceding species, except that the eleventh joint is rather more pointed. *Prothorax* somewhat depressed, sides evenly and rather strongly rounded; with a fairly deep and wide impression close to base; with three longitudinal impressions, of which the lateral ones are short and each terminates in a foveate expansion of the basal impression; the median impression is very feeble, and invisible from most directions. *Elytra* moderately convex, rather longer than usual; with eight small basal foveæ; dorsal striæ generally traceable to about middle, but distinct only at base; punctures more or less concealed. *Abdomen* with node absent or concealed; under surface feebly flattened along middle. *Metasternum* shallowly impressed along middle. *Front trochanters* obtusely dentate. Length 1 mm.

♀. Differs in having the antennæ thinner, cephalic impressions less pronounced, metasternum and abdomen rather strongly convex along middle, and trochanters unarmed.

*Hab.*—Tasmania: Waratah, Hobart, New Norfolk; in all cases in moss (A. M. Lea).

In general appearance very close to the preceding species, except that it is smaller, but with the median line scarcely (on some specimens not at all) visible, and terminal joint of antennæ even more pointed. The disc of each elytron, as in most species



of the genus, is somewhat paler than its base, apex, or suture, but the shades of colour are not sharply defined.

The clothing renders the sculpture of the head rather indistinct on some specimens, and on the prothorax more or less obscures the punctures, which appear to be fairly numerous. Five males before me each have a flange-like process much as noted under *E. pollux*.

EUPLECTOPS ZICZAC, n.sp.

♂. Reddish-castaneous, disc of each elytron and appendages somewhat paler. Moderately clothed with short pale pubescence.

*Head* with a deep curved impression, the ends of which appear as fairly large and almost closed interocular foveæ, base very obtusely notched in middle; antennæ connected by a slightly curved carina. Antennæ rather short, second joint subglobular, third to eighth very small, ninth and tenth moderately transverse but still small, eleventh briefly ovate, slightly longer than three preceding combined. *Prothorax* depressed, widest at about apical third, thence strongly narrowed to apex and less strongly to base; near base with a strong, angular impression; three longitudinal impressions short, the median one almost round, lateral impressions shallow in front, but foveate posteriorly; with numerous fairly distinct punctures. *Elytra* slightly longer than wide; basal foveæ shallow and indistinct, subsutural striæ much deeper than usual, dorsal striæ very distinct at base, but scarcely traceable to middle; punctures fairly numerous. *Abdomen* with medio-basal node and striæ very indistinct; lower surface scarcely flattened along middle. *Metasternum* shallowly impressed along middle. Length 1 mm.

*Hab.*—Tasmania : Hobart (A. M. Lea).

The small size and comparatively large terminal joint of antennæ, at first appearing to form a one-jointed club, are somewhat suggestive of *Limoniates*, but the head and prothorax are not as in that genus. About the size of *E. Odewahnii*, but head and prothoracic impressions, and abdomen of male different.

There are hardly any longer hairs scattered amongst the pubescence. The head is rather larger than usual, and its curved



impression is in parts decidedly narrow. The subbasal impression of the prothorax appears as a V in the middle, with an oblique impression connecting it with each side, so that the raised basal portion appears, from some directions, rather like a reversed W or a broad M, or as two rather wide triangles. The median line appears as a short foveate impression, closed at both ends, but from some directions it appears very indistinctly connected with the basal impression. The fifth ventral segment is gently emarginate at apex, with, beyond this, a rather deep transverse impression; seen directly from behind, this impression appears to consist of two small foveæ. The front trochanters of the type are not clearly visible.

EUPLECTOPS DEPRESSICOLLIS, n.sp.

Pale castaneous, disc of each elytron and appendages somewhat paler. Moderately clothed with short, pale, adpressed pubescence.

*Head* with, for the genus, a comparatively shallow curved impression, the ends of which appear as almost circular interocular foveæ, base obtusely notched in middle; antennary tubercles rather feeble. Antennæ rather short, second joint fairly large ninth and tenth moderately large and transverse, eleventh truncate-ovate, about as long as four preceding joints combined, apex distinctly produced. *Prothorax* depressed; near base with a straight transverse impression; median line very feeble, the lateral impressions represented only by slight expansions of the basal impression; with fairly numerous but very small punctures. *Elytra* depressed, slightly longer than wide; with eight small but distinct basal foveæ; dorsal striæ distinct only at base; punctures rather more numerous than on prothorax. *Abdomen* with two very short oblique basal carinæ, node apparently absent; under surface very feebly flattened along middle. *Metasternum* very vaguely impressed in middle. Length 1 mm.

*Hab.*—N. S. Wales: Tamworth, Clarence River (A. M. Lea).

The specimens described were seen by M. Raffray and returned as possibly *Euplectus subterraneus*, but King described the head of that species as "fronte alte transverse foveolato" and pro-

thorax as "fovea elongata media antice." From *E. bryophilus* it differs in being less convex, clothing sparser, antennæ less pointed, and cephalic sculpture shallower.

The cephalic impressions, from some directions, appear as three fairly large, but, for the genus, decidedly shallow, isolated foveæ. The basal impression of the prothorax, although very distinct, is, for the genus, rather shallow; the median line is so faint as to be invisible from some directions. The two specimens described are probably males, but I cannot see the front trochanters of either.

EUPLECTOPS BASALIS, n.sp.

Pale castaneous, disc of each elytron and appendages somewhat paler. Moderately clothed with short, pale pubescence, amongst which are scattered a very few longer hairs.

*Head* with a strong curved impression, the ends of which appear as strong interocular foveæ, base obtusely notched; antennæ connected by a curved carina. Antennæ as in the preceding species, except that the apical joint is shorter and much less pointed. *Prothorax* depressed, with a rather wide and slightly curved subbasal impression, ending on each side in a foveate expansion (these representing all that are left of the lateral impressions); median line very faint; punctures small but numerous and distinct. *Elytra* about as long as wide; with eight small basal foveæ; dorsal striæ scarcely traceable beyond base, punctures fairly distinct. *Abdomen* with a very feeble medio-basal node; under surface feebly flattened along middle. *Metasternum* somewhat flattened along middle. *Hind tibiæ* rather wider in middle than usual. Length  $1\frac{1}{6}$  mm.

*Hab.*—Tasmania: Waratah, in moss (A. M. Lea).

Close to the preceding species, but with more distinct punctures, club stouter, tibiæ wider, and impressions of head and elytra different. It is less hairy than *E. bryophilus*, with the club shorter and less pointed, etc. The median line of the prothorax is invisible from most directions.

## MESOPLATUS DUBIUS, n.sp.

♂. Reddish-castaneous, elytra slightly paler, appendages still paler. Almost evenly clothed with short white pubescence.

*Head* transverse, base distinctly notched; with two rather shallow foveæ on each side. *Antennæ* scarcely extending to base of prothorax, second joint fairly large and subglobular, third to eighth short, ninth and tenth larger, distinctly transverse and subequal, eleventh subobpyriform, apex pointed, the length of the three preceding joints combined. *Palpi* small. *Prothorax* distinctly wider than head, slightly wider than long, widest at apical third, where the sides are strongly rounded, with a wide and rather deep impression near base, traversed by a median and rather feeble impression, but becoming foveate at the impression, each side with a large fovea; punctures partially concealed by clothing. *Elytra* about as long as wide, sides feebly rounded; with eight small basal foveæ; dorsal striæ distinct at base, but terminated before basal third; with moderately distinct punctures. *Metasternum* with a small median fovea and feebly depressed beyond this to hinder apex. *Abdomen* with a small medio-apical tubercle on second segment, the following ones flattened across middle. *Legs* moderately stout; tibiæ feebly inflated near apex, the median pair obtusely spurred at apex itself. Length  $1-1\frac{1}{6}$  mm.

♀. Differs in having the metasternum scarcely depressed along middle, ventral segments gently convex in middle, and the second without a tubercle, the legs somewhat thinner and the antennæ slightly shorter, with the club smaller.

*Hab.*—W. Australia : Vasse River (A. M. Lea).

In general appearance close to several species of *Euplectops*, but second segment of abdomen of male with a tubercle as in the species of *Mesoplatus*. It is smaller than *M. Edwardsi*, not quite so wide, and head differently impressed. The two foveæ on the front of the head are feebly connected, and also connected with the others (which are slightly in advance of the eyes), but these are not transversely connected; the pubescence, however, somewhat obscures all the impressions.

## BATRISODES INSIGNICOLLIS, n.sp.

♂. Pale reddish-castaneous. Clothed with rather long, pale pubescence, and with numerous long hairs scattered about.

*Head* with a narrow and almost straight impression close to apex, the impression indistinctly connected on each side with a distinct round fovea close to each eye; forehead feebly impressed along middle. *Antennæ* long and thin, none of the joints transverse, seventh distinctly longer than eighth or sixth, eleventh somewhat shorter than ninth and tenth combined. *Prothorax* slightly transverse, widest at about apical third, thence strongly narrowed to apex and rather less, but still strongly, to base; near base with a strong transverse impression, with a subfoveate expansion in middle and another on each side, disc strongly elevated, with a wide impression on each side of its middle, the same connected with the latero-basal fovea, and irregularly continued across the middle not far from the apex; with an almost closed transverse impression slightly nearer apex than base; with irregularly distributed punctures. *Elytra* with dorsal striae distinct at base and shallowly traceable almost to middle; shoulders unarmed. *Metasternum* rather deeply and widely impressed along middle. *Abdomen* flattened along middle of under surface, apical segment with a feeble apical node. *Trochanters* unarmed. Length  $2.2\frac{1}{6}$  mm.

♀. Differs in being slightly less robust, antennæ somewhat thinner, prothorax less inflated near apex, with lateral and basal impressions only, and disc less convex, the cephalic impressions shallower, metasternum very feebly impressed along middle, and abdomen nowhere flattened.

*Hab.*—Victoria(C. French); Wandin(National Museum).

Readily distinguished from all previously described Australian species by the shape of the prothorax. On careful examination all the prothoracic impressions can be seen to be connected, although from most directions the transverse submedian one appears to be closed; immediately in front of this impression the surface from some directions appears to be raised into obtuse

tubercles, almost (from some directions apparently quite) closing the passage of the subapical impression. The space directly behind the impression, from some directions, appears to be transversely oblong.

On this and all the following species there is a more or less conspicuous fringe of long pale hairs on each side of the lower surface of the head, just behind the eyes. They also all have several feeble elevations and depressions at the extreme base of the upper surface of abdomen, but as these are more or less distinct, according to the position of the elytra, it is not considered necessary to describe them.

*BATRISODES TENUICORNIS*, n.sp.

♂. Reddish-castaneous, elytra paler, appendages still paler. With moderately long, pale pubescence, and with a few long hairs scattered about.

*Head* with a shallow impression between antennary tubercles, which are fairly distinct; with a rather large fovea close to each eye, closed behind but shallowly open in front; base feebly notched. Antennæ long and thin, none of the joints transverse, third shortest of all, sixth and eighth slightly shorter than fifth and seventh, ninth and tenth rather long, and each not much shorter than eleventh. *Prothorax* about as long as wide, sides strongly rounded in front, and more gently to base; near base with a deep sinuous impression; each side with a deep impression which is narrowed in front and dilated behind, till it irregularly joins in with the subbasal line; near apex with a deep, irregular, transverse impression; disc strongly convex, the middle raised and in the form of an obtuse triangle overhanging the frontal impression; punctures sparse and very irregularly distributed. *Elytra* with dorsal striæ deep and distinct at base, but rapidly decreasing in depth, and terminated before middle; shoulders unarmed. *Metasternum* strongly impressed along middle. *Trochanters* unarmed. Length  $1\frac{4}{5}$  mm.

*Hab.*—N. S. Wales: National Park(H. J. Carter).

In general appearance very close to the preceding species, but prothorax with different impressions and when seen directly from

in front with two medio-apical tubercles instead of evenly rounded; seen from the side, there appears an obtuse tooth overhanging the frontal impression, the lateral impression seems to have an isolated granule, and at the base itself there is a small closed fovea.

*BATRISODES GIBBICOLLIS*, n.sp. (Pl. xxi., fig. 2.)

♂. Bright reddish-castaneous, appendages very little paler. With rather long pale pubescence; with sparse and paler long hairs scattered about.

*Head* with antennary tubercles somewhat rounded and prominent, a narrow impression between them; forehead with a narrow longitudinal impression; with a distinct but rather small fovea close to each eye, closed behind but narrowly open in front. Antennæ long and thin. *Prothorax* lightly transverse, sides strongly dilated and with distinct punctures near apex; with a deep, rounded fovea, close to base, and shallowly connected with an irregular impression on each side of base, the irregular impression continued round sides to apex; disc strongly elevated, the elevated portion gradually narrowed to apex, which is truncated or very gently arcuate and overhangs a frontal excavation. *Elytra* with dorsal striæ fairly deep, but terminated before middle; shoulders somewhat raised but unarmed; with fine scattered punctures. *Metasternum* rather shallowly impressed along middle, with a granule between hind coxæ. *Trochanters* unarmed. Length  $2\frac{1}{4}$ - $2\frac{1}{2}$  mm.

*Hab.*—Victoria (National Museum, ex E. Jarvis).

Seen from the side the prothorax appears to be largely excavated in front, with a tubercle overhanging the excavation; a character which will readily distinguish the species from all previously described ones. The antennæ are much as in the preceding species, except that the fifth and seventh joints are slightly longer, and the ninth and tenth slightly shorter

*BATRISODES APICICOLLIS*, n.sp.

♂. Colour and clothing much as in the preceding species.

*Head* rather convex; antennary tubercles rather small, a narrow impression between them; with a rather large ovate fovea close to each eye, closed behind but open in front; base obtusely notched. *Antennæ* as in *B. tenuicornis*. *Prothorax* slightly longer than wide, widest at about apical third, thence strongly narrowed to apex and subarcuate to base; with deep irregular impressions; disc strongly raised. *Elytra* with dorsal striae distinct only on basal slope, but traceable to basal third; shoulders unarmed. *Metasternum* strongly impressed along middle. *Trochanters* unarmed. Length  $2\frac{1}{6}$  mm.

*Hab.*—N. S. Wales : Illawarra (H. J. Carter).

The prothorax is very irregularly sculptured; near the base there is a deep fovea, from some directions appearing almost round, from others somewhat v-shaped and shallowly and irregularly connected with the sides. On each side of the base there is a small isolated fovea, and two suboblique impressions close together and connected at their apices. The dilated sides about the apex have distinct punctures, and are separated from the disc by deep lines. The disc is strongly raised and is triangularly pointed in front (a character which will readily distinguish it from the preceding species), the point being level with the middle of the dilated lateral parts; the whole of the space in front, and at the sides of it, is largely and irregularly impressed, but the impressions are somewhat obscured by the clothing.

#### BATRISODES PUNCTIFRONS, n.sp.

♂. Colour and clothing much as in *B. gibbicollis*.

*Head* moderately convex; antennary tubercles rather small, a shallow impression between them; forehead with a distinct median line; with a small round fovea close to each eye, closed behind, but narrowly open in front. *Antennæ* as in *B. gibbicollis*. *Prothorax* about as wide as long, widest at about one-third from apex, thence strongly rounded to apex and more gradually narrowed to base; with a fairly deep fovea close to base, and irregularly and shallowly connected with sides, which are also irregularly foveate; a shallow impression on each side marking off the



dilated parts (which are densely punctured in front) from the disc; disc convex, with the convex part gradually narrowed in front, and at apex truncated. *Elytra* with dorsal striæ fairly deep about base, and traceable almost to middle; shoulders unarmed and somewhat narrower than usual. *Metasternum* shallowly impressed along middle; with a small granule between hind coxæ. *Trochanters* unarmed. Length  $2\frac{1}{5}$  mm.

*Hab.*—N. S. Wales: Illawarra (H. J. Carter).

The prothorax is somewhat as in *B. gibbicollis*, but the apex as seen from the sides is much less excavated, with the disc less strongly raised and its apex not overhanging; the lines marking off the dilated sides are also much shallower, with the dilated parts themselves punctured only in front. It is also a somewhat narrower species.

BATRISODES KERSHAWI, n.sp.

♂. Reddish-castaneous, elytra and appendages slightly paler. Clothed with rather long pale pubescence.

*Head* rather more convex and with smaller eyes than usual; antennary tubercles rather large and obtuse, the space between them depressed but without a sutural line; forehead with a narrow median carina; a rather short curved impression on each side, ending in a slight foveate expansion close to the eye. Antennæ long and rather thin, third joint slightly longer than second, fifth and sixth each slightly longer than seventh, eighth shortest of all, ninth the length of sixth, tenth slightly shorter, eleventh somewhat shorter than ninth and tenth combined. *Prothorax* less convex than usual, slightly longer than wide, sides strongly rounded and strongly lessened to apex, and less strongly to base; near base with a fovea irregularly connected with latero-basal impressions; each side with a deep impression appearing to terminate suddenly about the middle, but really very feebly connected with the apex. *Elytra* rather wider and less convex than usual; dorsal striæ traceable only on basal slope; shoulders unarmed. *Metasternum* widely impressed along middle, the impression rather shallow at base, but becoming deeper in middle posteriorly. Hind *trochanters* strongly dentate. Length  $2\frac{1}{2}$  mm.

*Hab.*—Victoria: Emerald, in damp places (National Museum ex E. Jarvis).

In general appearance rather close to *B. tibialis*, but larger and stouter, head not quite the same, dorsal striæ much shorter, tibiæ simple, etc. The head is somewhat as in *B. bimucronatus*, but the prothorax is without the conspicuous median channel of that species.

The pubescence is rather long, but on the two specimens before me there are no long hairs scattered about. The medio-basal impression on the prothorax from some directions appears in the form of a narrow deep isolated line, from others it appears fairly large and rounded, with a feeble subtubercular elevation on each side of it, the tubercles being quite distinct from the sides; the lateral impressions from some directions appear rather deep, but from others each appears as an almost rounded and isolated fovea.

#### EUPINES.

The males of this genus usually have very distinctive features in the metasternum and abdomen, and often in the legs and antennæ, but the females seldom possess such. I think that no species of the genus should be described from the female only, although this has been done in many instances, with the probability of causing confusion.

It is not always easy to mount single and small (such as all species of this genus are) specimens, so that both the under and upper surfaces can be examined, but it is absolutely necessary to do this in *Eupines*, as many species strikingly alike on the upper surface, even in such an abnormal feature as a strongly inflated fifth antennal joint, are quite readily distinguished by the metasternum and abdomen. The front trochanters of the males are also frequently armed, but the armature is not always easy to see, even on specimens mounted on their backs. The second abdominal segment appears to be the first, the true first nearly always being almost or quite concealed.

Of some of the species of which only the male is here described, I probably have the female, but not being certain that they are correctly mated, I refrain from describing the latter sex

## EUPINES QUINTANA, n.sp.

♂. Piceous-brown, elytra bright reddish-castaneous, legs and antennæ somewhat paler, but club slightly darker. With rather long, pale, straggling, sparse hairs.

*Head* with a minute puncture close to each eye, and a very shallow depression behind base of each antenna. *Antennæ* with fifth joint inflated, and angularly produced at its inner apex, ninth slightly transverse and feebly produced inwardly, tenth more transverse and also feebly produced inwardly, eleventh rather large and ovate. *Prothorax* widest at about one-third from apex. *Elytra* with a faint impression on each side of base, representing the dorsal striæ. *Metasternum* rather narrowly and deeply grooved. Second segment of *abdomen* with a small flattened suboblong median node, rather nearer its base than its apex, apical segment flattened in middle. Front *trochanters* finely and acutely dentate. Length 1 mm.

♀. Differs in having the fifth joint of antennæ scarcely stouter (although slightly longer) than fourth or sixth, the club smaller, metasternum faintly impressed and only at apex and abdomen, and trochanters simple.

*Hab.*—Tasmania: Jordan River, Launceston, Stonor, Swansea, Hobart(A. M. Lea).

Differs from *E. globulifera* in having the antennæ of both sexes longer, metasternum of male apparently strongly carinate\* on each side of sulcus and not tuberculate posteriorly. *E. nigriceps* is smaller and differently coloured, with tenth joint of antennæ, and metasternum different. *E. nigricollis* is larger, with two distinct punctures or small foveæ between eyes. *E. bicalvata* is very differently coloured, with abdomen of male different. *E. sobrina* (from Tasmania) is described as castaneous, with the elytral disc paler. *E. vitrea* (also from Tasmania) is described as differently coloured, and the sutural stria scarcely impressed.

Most of the specimens before me have the prothorax as dark as the head, but on some it is not so dark, although never so pale

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\* This appearance is due to the rather precipitate sides of the sulcus, and not to any elevation of the surface itself.

as the elytra; the latter occasionally have the suture feebly infuscated. The ninth and tenth joints are slightly darker than the eleventh. The clothing on some specimens is very distinct, but appears to be easily abraded.

Two specimens before me (sexes) are entirely pale, but this is probably from immaturity. In appearance they are remarkably close to *E. sulcata*, but the second ventral segment has a much shorter tubercle.

EUPINES DISTORTICORNIS, n.sp.

♂. Dull reddish-castaneous, legs somewhat paler, club slightly darker.

*Head* rather more transverse than usual, with a shallow impression close to each eye, and a somewhat larger but shallower impression behind each antenna. Antennæ with fifth joint inflated and angularly produced at inner apex, ninth moderately transverse and somewhat produced on one side, tenth larger than ninth, one side of apex somewhat produced, the other excavated, eleventh fairly large, with the inner base strongly produced backwards. *Prothorax* widest at about one-third from apex. *Elytra* rather more strongly dilated posteriorly than usual, dorsal striæ traceable at extreme base only. *Metasternum* widely and shallowly impressed along middle. *Abdomen* with second segment impressed along middle. Length 1 mm.

♀. Differs in having fifth joint of antennæ simple, metasternum not impressed along middle, and abdomen simple.

*Hab.*—W. Australia: Vasse, Boyanup (A. M. Lea).

In many respects close to Raffray's description of *E. diversicolor*, but the antennæ differ from Raffray's figure in the ninth joint being much less produced, and the eleventh strongly produced obliquely backwards on one side; the fifth is produced on one side also. From the original description it differs in several respects in colour. The shapes of the joints of the club readily distinguish it from all other species having the fifth joint inflated.

The upper surface at first appears to be quite glabrous, but on careful examination a few pale hairs are to be seen. The

abdominal impression from some directions appears to be supplied with a minute tubercle on each side of its apex. The legs of the male appear to have no distinctive features, but I cannot examine the trochanters of the type.

EUPINES TUBERCULIFERA, n.sp.

♂. Bright reddish-castaneous, legs and tip of abdomen paler, head much darker, fifth and ninth and tenth joints of antennæ lightly infuscated. Upper surface with distinct and rather long pale hairs.

*Head* with a shallow impression close to each eye, and a still more shallow one on each side in front. *Antennæ* with fifth joint moderately inflated, ninth and tenth somewhat produced on one side, eleventh ovate. *Prothorax* widest at about one-third from apex. *Elytra* with sides rounded, but apex very little wider than base, dorsal striæ traceable only on basal slope. *Metasternum* distinctly impressed posteriorly. *Abdomen* with a conspicuous, subconical, medio-apical tubercle on second segment. *Front trochanters* each with a long acute spine. Length 1 mm.

*Hab.*—New South Wales : Sydney (H. J. Carter).

In other species the interocular impressions, when present, are round and perfect, although often shallow; in the present species, however, they open out towards the sides, so that from some directions they appear to be semicircular, with the inner side of each convex. The fifth joint of the antennæ, although distinctly inflated, is rather smaller than in other species having it large.

Agrees fairly well with the original description of *E. pumilio*, but Raffray notes that species as having the second ventral segment with a fine longitudinal carinule extending beyond the middle, and the forehead with transverse impressions. There are several of Schaufuss's species with the fifth joint inflated, about which information as to the ventral characters is still required, but Raffray has fortunately described such for most of the former's species.

EUPINES OBLONGIFERA, n.sp.

♂. Colours as in the preceding species. Upper surface with sparse, straggling, pale hairs, becoming rather conspicuous on abdomen.

*Head* with four shallow impressions. *Antennæ* with fifth joint inflated and produced on one side of apex, ninth about as long as wide, tenth rather strongly transverse, eleventh ovate. *Prothorax* widest at about apical third, and rather more strongly narrowed to base than usual. *Elytra* comparatively large, apex distinctly wider than base; dorsal striæ traceable at extreme base only. *Metasternum* rather strongly impressed along middle. *Abdomen* with an oblong tubercle on second segment, the tubercle surrounded by a narrow impression. Front *trochanters* feebly and obtusely dentate. Length  $1\frac{1}{5}$  mm.

*Hab.*—New South Wales: Sydney (H. J. Carter).

In general appearance close to *E. quintana*, but abdominal tubercle completely isolated by a narrow impression (somewhat as on the prothorax of *Bothrideres Mastersi*), although from some directions it is not very distinct. The front trochanters are also not acutely dentate, the fifth joint is smaller, and the metasternal impression is shallower and more dilated posteriorly. The only male before me was sent mounted on the same card with two males of the preceding species, and in fact it bears a quite extraordinary resemblance to it, but the very different second segment of abdomen, and front trochanters, readily distinguish the two species. A female mounted and sent on the same card may belong to either species; its abdomen and trochanters are simple, and the fifth joint of antennæ is not inflated.

#### EUPINES MIRA, n.sp.

♂. Bright reddish-castaneous, legs and eleventh joint of antennæ paler, rest of antennæ, except basal joints, darker. Upper surface with very sparse, and rather short, pale hairs.

*Head* scarcely visibly impressed close to each eye, and impressions behind antennæ very faint. *Antennæ* rather long, first to seventh joints each longer than wide, eighth small, about as long as wide, ninth moderately, tenth strongly transverse, eleventh briefly ovate. *Prothorax* comparatively short, widest at about two-fifths from apex. *Elytra* moderately dilated posteriorly, dorsal striæ traceable only at and about base. *Metasternum*

largely excavated along middle, each side of the excavation near the apex with a small acutely conical tubercle. *Abdomen* widely flattened along middle, apical segment shallowly depressed. *Front trochanters* acutely dentate; front tibiæ gradually dilated from base to beyond the middle, and then suddenly narrowed to apex; hind tibiæ strongly and acutely dentate near apex, with the apical half somewhat inflated. Length 1 mm.

♀ Differs in having legs and abdomen simple, and metasternum unarmed and more shallowly impressed along middle.

*Hab.*—W. Australia: Swan River, at lights; Vasse River, in flood-débris(A. M. Lea).

The combination of conspicuously pale terminal joint of antennæ, curious front and hind tibiæ, with the armed metasternum of the male, readily distinguish it from all previously described species.

The interocular impressions are so faint and minute that it is only with great difficulty that they can be seen at all. The metasternal tubercles are very distinct from the sides, and are placed immediately behind the hind coxæ. There are 29 females before me, but only six males.

#### EUPINUS LITORALIS, n.sp.

♂. Rather pale castaneous. Clothed with very short, depressed pubescence.

*Head* rather more transverse, and with rather larger eyes than usual, interocular impressions very small and faint, frontal ones almost or quite absent. Antennæ short, first and second joints moderately large, third to ninth very small, tenth large and moderately transverse, eleventh briefly ovate. *Prothorax* shorter than usual, widest almost at extreme apex. *Elytra* conjointly gently arcuate at base, sides moderately dilated posteriorly; dorsal striæ entirely absent. *Metasternum* very widely and shallowly impressed along middle. Second segment of *abdomen* with a minute median tubercle. *Trochanters* unarmed. Length 1 mm.(vix).



♀. Differs in having tenth joint of antennæ much, and the eleventh slightly smaller; metasternum shallowly impressed and only between hind coxæ, and abdomen non-tuberculate.

*Hab.*—New South Wales: Clifton (A. M. Lea).

In general appearance close to *E. exigua*, but elytra very finely pubescent, and at base with an even curvature not at all interrupted by remnants of dorsal striæ; and the metasternum and abdomen different. *E. capitata*, which it much resembles, has distinct cephalic impressions, and elytra with remnants of dorsal striæ. *E. lævifrons* is shining, and also with remnants of dorsal striæ. *E. concolor* is described as having a large fovea on the apical segment.

The front and middle tibiæ of the male are slightly dilated at apex, but the inflation is not conspicuous; occasionally, however, owing to the clogging of some hairs near the apex of the middle pair, these appear to be rather strongly inflated. The club is conspicuously two-jointed. The fine pubescence causes the derm to appear subopaque. Numerous specimens were taken on a beach, under stones, just above high-water mark.

#### EUPINES CARTERI, n.sp.

♂. Pale castaneous, appendages somewhat paler, except club, which is slightly darker. Clothed with very fine, depressed pubescence.

*Head* with interocular impressions small but fairly distinct, and frontal ones very shallow. *Antennæ* short. *Prothorax* rather shorter than usual. *Elytra* with a vague impression close to each shoulder, representing the dorsal striæ. *Metasternum* widely and shallowly impressed along middle. *Abdomen* with a small but distinct tubercle in middle of second segment. *Trochanters* unarmed. Length  $\frac{4}{5}$  mm.

*Hab.*—New South Wales: Gosford, in moss (H. J. Carter).

In general appearance very close to *E. capitata*, but male with eleventh joint of antennæ larger and tenth smaller, tubercle of abdomen without a depression behind it when viewed from any direction, and metasternum more excavated along middle. Also

close in appearance to *E. exigua* (the club of which is as in the male of *E. capitata*), but elytral pubescence denser and finer, and prothorax rather wider at base. Also very close to the preceding, and with pubescence almost the same, although not quite so short, but the metasternal excavation is rather shallower, prothorax wider at base and a trifle shorter, and elytra with vague remnants of dorsal striæ. The antennæ at first appear much the same, but the tenth joint is shorter and so more transverse, and the eleventh is even more briefly ovate; the ninth joint is somewhat larger, so that the club should perhaps be regarded as three-jointed instead of two-jointed.

EUPINES BITUBERCULATA, n.sp.

♂. Bright reddish-castaneous, appendages somewhat paler, head generally much darker, suture lightly infuscated. Upper surface glabrous.

*Head* without interocular impressions, and the frontal ones very shallow and indistinct. Antennæ rather long, ninth joint feebly transverse, tenth fairly large but very feebly transverse, eleventh ovate. *Prothorax* fairly long and strongly convex, widest at about apical fourth. *Elytra* rather large and dilated posteriorly although not to apex; subsutural striæ comparatively feeble, the dorsal ones entirely absent. *Metasternum* rather widely and shallowly impressed. *Abdomen* with two conspicuous tubercles close together at apex of second segment, and slightly overhanging the third. *Trochanters* apparently unarmed; front tibiæ moderately dilated at apical third, and then narrowed to apex. Length  $1.1\frac{1}{5}$  mm.

♀. Differs in having the metasternum much more shallowly impressed, the abdominal tubercles absent, and front tibiæ simple.

*Hab.*—New South Wales: Sydney, seven specimens in grass tussocks(A. M. Lea).

The sexual characters are much as described by Raffray for *E. melanocephala*, but the types are from Sydney, and the abdomen in all of them is no darker than the elytra; Schaufuss described

the head and abdomen as piceous-black, and the type as from Tasmania.

Some of the specimens have the head no darker than the prothorax, but on others it is almost black. The dilatation of the front tibiæ, although distinct, is much less so than in several other species, and has hardly a trace of a dentate appearance.

EUPINES HELENÆ, n.sp.

♂. Dark piceous-brown, legs and palpi of a rather dingy castaneous. Upper surface (except of abdomen, which is very finely pubescent) glabrous.

*Head* with a small but rather deep puncture close to each eye; frontal impressions absent. *Antennæ* rather short, second joint slightly longer than wide, third to ninth short, tenth large, feebly transverse, eleventh ovate, slightly smaller than tenth. *Prothorax* rather short, widest quite close to apex. *Elytra* about as long as wide, apex very little wider than base; without traces of dorsal striæ. *Metasternum* rather vaguely impressed along middle. *Abdomen* with a fairly distinct impression along middle of second segment. *Front trochanters* somewhat obtusely dentate. Length  $\frac{4}{5}$  mm.

*Hab.*—Tasmania: Huon River, in tussocks; Hobart, in moss (A. M. Lea).

More elongate than *E. nigra*, and tenth joint of antennæ considerably larger, with metasternum much less impressed along middle.

One of the specimens before me is almost black, another is of a rather dark reddish-brown. The tenth joint is slightly shorter than the eleventh, but its bulk is slightly more. I have named this species after my eldest daughter, whose quick eyes have frequently been of assistance to me, when examining sievings from mosses and tussocks for insects.

EUPINES NIGRICLAVA, n.sp.

♂. Blackish-brown, elytra dark reddish-brown, legs somewhat paler; antennæ slightly darker than legs, but club distinctly darker. Clothing as in the preceding species.

*Head* with interocular impressions very minute and frontal ones very faint. *Antennæ* with second joint fairly large, tenth transverse, and not half the length of eleventh, which is ovate. *Prothorax* and *elytra* much as in the preceding species, except that the latter are rather more dilated posteriorly. *Metasternum* widely and rather shallowly impressed. *Abdomen* with two small tubercles close together near apex of second segment; apical segment with a round, shallow fovea. *Front tibiæ* rather strongly inflated to beyond the middle, the inflation ending in a strong subtriangular tooth, thence emarginate to apex. Length 1 mm. (vix).

♀. Differs in having the club slightly smaller, metasternum convex, abdomen without tubercles or foveæ, and front tibiæ simple.

*Hab.*—Tasmania: Frankford(A. M. Lea).

In general appearance very close to the preceding species, but the tenth joint of male very much smaller than eleventh; and the front tibiæ armed; the latter character will also distinguish it from *E. nigra*. I have not been able to see clearly the front trochanters of the only male before me.

#### EUPINES MODICA, n.sp.

♂. Dark reddish-brown, or piceous-brown, *elytra* not much paler, legs and eleventh joint of antennæ still paler, but not very pale. *Elytra* scarcely visibly pubescent, the abdomen with very minute, but rather more noticeable clothing.

*Head* with interocular and frontal impressions absent or extremely faint. *Antennæ* with second joint scarcely longer than wide, third to ninth short, tenth rather strongly transverse, eleventh briefly ovate. *Prothorax* and *elytra* as in the preceding species. *Metasternum* semicircularly impressed beyond the middle. *Abdomen* with two very minute granules or fascicles near apex of second segment, between which a very faint impression can be seen from some directions. *Trochanters* apparently unarmed. Length 1.1½ mm.

♀. Differs in having antennæ somewhat shorter, with the club smaller, metasternum impressed only between hind coxæ, and abdomen without granules or longitudinal impression.

*Hab.*—New South Wales: Ourimbah, in moss; Forest Reefs—Tasmania: Huon River (A. M. Lea).

From *E. nigra* distinguished by the very feeble impression on metasternum and much smaller abdominal granules; from *E. Helenæ* by the different tenth joint of antennæ; from *E. nigriclava* by the unarmed tibiæ; and from *E. bicolor* by the shorter antennæ and very different abdomen.

#### EUPINES INDISTINCTA, n.sp.

♂. Dark piceous-brown, elytra somewhat paler, appendages still paler, but not very pale. Upper surface glabrous, except of abdomen, which is very finely pubescent.

*Head* with interocular impressions absent, and frontal ones extremely faint. Antennæ with second joint subglobular, third to ninth short, tenth fairly large and transverse, eleventh briefly ovate. *Prothorax* and *elytra* as in the two preceding species. *Metasternum* rather widely and shallowly impressed. *Abdomen* with a feeble impression on second segment. *Front trochanters* very obtusely dentate. Length 1 mm.

*Hab.*—Tasmania: Launceston, in tussocks; Huon River, Hobart (A. M. Lea).

Distinguished from the three preceding species, and from *E. bicolor*, by the basal segment of the abdomen, which has a minute median impression marking the apex of a feeble triangular depression, the base of which is at the apex of the segment. Both impression and depression are extremely feeble, however, and both can usually not be seen at the same time. From some directions the median depression appears as a minute tubercle. The tenth joint of antennæ is distinctly larger than in either of the two preceding species, but is smaller than in *E. Helenæ*.

Some specimens, which are probably females of the species, differ from the males in being slightly smaller, antennæ shorter with tenth joint much smaller, metasternum impressed only

between the hind coxæ, abdomen without impression and trochanters edentate.

EUPINES TIBIALIS, n.sp.

♂. Colours and clothing as in the preceding species, except that the club is darker.

*Head* without visible interocular or frontal impressions. *Antennæ* with second joint fairly large, tenth moderately large and transverse, eleventh ovate. *Prothorax* and *elytra* as in the three preceding species, except that the latter are rather more dilated posteriorly. *Metasternum* largely impressed along middle, and with an obtuse tubercle behind each hind coxa. *Abdomen* with a fairly large impression on second segment, the impression dilated posteriorly, and at each side of its apex with an obtuse tubercle; apical segment with a distinct but rather shallow impression. Front *trochanters* obtusely dentate; front tibiæ somewhat inflated near apex, and thence suddenly lessened to apex itself. Length  $1\frac{1}{4}$  mm.

*Hab.*—New South Wales: Wollongong (A. M. Lea).

In general appearance very close to *E. nigriclava*, but antennæ with tenth joint larger; front tibiæ thickened near apex but not obtusely dentate; and abdomen and metasternum somewhat different. The tenth joint is almost as large as in the preceding species. It is also very close to *E. nigra*, but front tibiæ considerably stouter, excavation of basal segment more pronounced, with its marginal tubercles more conspicuous. In *E. Helenæ* the sides of the elytra are somewhat rounded, but lines drawn from the shoulders to the apices would be parallel to each other; in the three preceding species such lines would be somewhat divergent, and in the present species still more noticeably so.

EUPINES INERMIS, n.sp.

♂. Of a rather dark reddish-brown, upper surface of head and of abdomen somewhat darker, legs and two apical joints of antennæ rather pale castaneous. Upper surface with very sparse, straggling hairs.

*Head* without interocular impressions, the frontal ones feeble but fairly distinct. Antennæ comparatively long, second joint fairly large, third to eighth each slightly longer than wide, ninth subglobular, tenth moderately transverse and rather small, eleventh ovate. *Prothorax* moderately long, widest at about apical third. *Elytra* slightly longer than wide, shoulders strongly rounded, a vague depression within each shoulder representing remnants of dorsal striæ. *Metasternum* rather strongly impressed, the impression dilated posteriorly. *Abdomen* with a feeble longitudinal impression extending, with interruptions, to apex. *Legs* unarmed. Length 1 mm.

*Hab.*—New South Wales: Sydney (A. M. Lea).

In general appearance close to *E. pallipes*, but without a conspicuous puncture near each eye, antennæ differently coloured, and apex of abdomen not paler than the base. *E. mira*, which has the terminal joint of antennæ pale, is otherwise coloured, and has four of the tibiæ armed in the male.

#### EUPINES RECURVA, n.sp.

♂. Of a rather bright pale castaneous; appendages somewhat paler. Upper surface glabrous, except of abdomen, which is finely pubescent.

*Head* without interocular impressions, and frontal ones rather faint. Antennæ with second joint rather large, tenth rather small and feebly transverse, eleventh ovate. *Prothorax* rather short, widest quite close to apex. *Elytra* rather strongly dilated posteriorly and much wider at apex than at base; dorsal striæ very faintly traceable, and only at extreme base. *Metasternum* shallowly impressed. *Abdomen* with a slightly raised and curved carina at apex of second segment, the convex side of the carina directed towards base, apical segment with a large curved impression. Front and hind *trochanters* obtusely dentate; front tibiæ dilated to beyond the middle, and thence emarginate to apex. Length 1 mm.

*Hab.*—New South Wales: Nepean River (A. J. Coates).

In some respects close to *E. tuberosa*, but head and club not infuscated, and carina or tubercle of abdomen at extreme apex



of its segment, instead of close thereto. Also close in appearance to *E. aurora*, but smaller, second segment of abdomen not subopaque, its tubercle of different shape, and apical one without two setæ directed forwards. From some directions the front tibiæ appear conspicuously dentate.

EUPINES TARSALIS, n.sp.

♂. Reddish-castaneous, elytra and appendages somewhat paler. With comparatively dense and somewhat golden pubescence, rather sparser on prothorax than elsewhere.

*Head* with two small but fairly deep and conspicuous interocular foveæ; frontal impressions small but fairly distinct. *Antennæ* fairly stout, second joint very little longer than third, second to fourth subglobular, fifth somewhat longer and more cylindrical, sixth and seventh moderately, the eighth more strongly transverse, ninth fairly large, acutely produced at outer apex, tenth larger and of somewhat irregular shape, eleventh slightly larger than tenth and briefly ovate. *Prothorax* rather short, widest at about apical third, with minute but traceable punctures. *Elytra* slightly longer than wide, dorsal striæ deep at base and distinct to middle of disc; with fairly dense and quite distinct punctures. *Metasternum* rather widely and deeply impressed along middle. *Abdomen* with a small but conspicuous medio-apical fascicle on second segment, apical segment very shallowly impressed. *Trochanters* apparently edentate; femora and front tibiæ rather stout; hind tarsi with basal joint minute, second large, about one-third the length of tibia and inflated to one side of apex, apical joint fairly large but partially concealed by second; middle tarsi with first joint small but larger than on the hind pair, second large, but not much larger than third, and much smaller than the second of the hind tarsi; front tarsi with first joint small and the second larger but not longer than third; each terminated by a single claw. Length  $1\frac{3}{4}$  mm.

♀. Differs in having the club with smaller and simple joints, metasternum convex along middle, abdomen non-fasciculate, and hind tarsi with second joint shorter and not produced at one side of apex.

*Hab.*—Tasmania: Mount Wellington, Waratah, in moss (A. M. Lea).

The hind tarsi are very peculiar, and had the species been before M. Raffray it is possible that he would have referred it to a new genus. It is unusually large for *Eupines*, and with the dorsal striæ and elytral punctures quite distinct. The under surface of the tenth joint appears to have a feeble fascicle at its apex, and from certain directions this causes it to appear feebly tuberculate.

*EUPINES CAPITATA* King.

A male of this species from the late Rev. R. L. King's Collection is before me. Its metasternum is widely and rather shallowly sulcate. Basal segment of abdomen with a feeble median node (from some directions this appears to be semidouble and marking the apex of a very short and feeble longitudinal impression) immediately behind which is a feeble transverse impression at the apex, but invisible from certain directions. The apical segment is widely and rather feebly impressed. In addition to the transverse impression on the head, mentioned by King, there is a very feeble rounded impression towards each side. The upper surface is clothed with very fine pubescence.

*EUPINES BICLAVATA* Raffr.

A specimen of this species, from the Victorian Alps, is in the National Museum, Melbourne.

*EUPINES SULCATA* Sharp.

The male of this species is readily known by the inflated fifth joint of antennæ, which is obtusely produced to one side, and by the conspicuous median carina on the under surface of the abdomen.

*Hab.*—W.A.: Swan River, Beverley—Queensland: Dalby—New South Wales: Sydney.

*EUPINES LATICLAVA* Schauf. (*Bryaxis*).

A specimen\* before me, from the Clarence River, in New South Wales (the type was described as from Tasmania) probably

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\* It was sent to M. Raffray some years back, but returned without comment, although his attention was specially drawn to it.

belongs to this species. Schaufuss described the antennæ as "*10-articulatis, articulis 8-10 valde clavatis, nono latiore.*" The Clarence River specimen, from above, certainly appears to have but 10 joints, with the ninth widest; but from below the supposed ninth joint is seen to be really the tenth, the true ninth being small, and projecting to one side, but not sufficiently so to be seen from above; the eighth is large and strongly transverse, tenth largest and widest of all, sides rounded, one side of base emarginate and produced, the other feebly emarginate and not produced, eleventh briefly obpyriform.

From above, the eighth appears larger than from below, the true tenth appears larger at one end than the other, but scarcely emarginate; the others appear as from below.

The specimen is a male, with the metasternum gently concave and with a minute tubercle on each side of middle of apex; and second segment of abdomen, on its under surface, with a flat feeble medio-basal elevation, appearing semidouble from some directions.

RYBAXIS PARVIDENS, n.sp.

♂. Dark reddish-castaneous; legs slightly paler, elytra bright castaneous, but suture darker, tenth joint of antennæ piceous, the eleventh palest of all. With short pale pubescence, more noticeable on abdomen than elsewhere.

*Head* with two large, closed, interocular foveæ, and a fairly large interantennal impression. *Antennæ* with first joint fairly large and subcylindrical, second subglobular, fifth distinctly longer than fourth or sixth, seventh and eighth short and subtriangularly produced on one side, ninth larger and very obtusely produced on one side, tenth rather large and subtrapeziform, eleventh ovate, not as long as the two preceding combined. *Prothoracæ* widest at about apical third, sides strongly rounded, with a large fovea on each side near base, with a deep curved impression connecting them, the impression but slightly expanded in middle. *Elytra* rather large; dorsal striæ distinct, somewhat curved and vanishing

close to apex, with irregularly distributed punctures; epipleural furrow deep, lightly curved and terminated at about one-fifth from base and apex. Upper surface of *abdomen* with a small medio-basal node, on each side of which is an extremely short stria; lower surface somewhat flattened in middle. *Metasternum* widely flattened or very gently concave in middle; on each side, just behind hind coxæ, with a fairly large subconical tubercle. Front *tibiæ* lightly curved; very feebly dentate slightly nearer base than apex. Length  $1\frac{4}{5}$ - $2\frac{1}{4}$  mm.

♀. Differs in having thinner antennæ, with none of the joints produced inwards, and the eleventh as long as the ninth and tenth combined; the abdomen is convex on its under surface, and the metasternum and legs are unarmed.

*Hab.*—Tasmania: Hobart, Mount Wellington, Long Bay; in moss (A. M. Lea).

In many respects close to *E. quadriceps*, but smaller, darker, and front *tibiæ* more curved and almost simple, instead of with a conspicuous median tooth or emargination, and with the ninth joint as well as the seventh and eighth produced to one side. From *E. adumbrata* it differs in the front *tibiæ* with the tooth nearer the base, body more robust, and metasternum with a conspicuous subapical tubercle on each side.

Some specimens have the abdomen almost piceous. The ninth joint of antennæ is sometimes almost as dark as the tenth. From some directions the seventh and eighth joints of the male appear to be quite acutely produced inwards, and the latter to be very small; the sixth also from some directions appears to be obtusely produced inwards; the tenth on some appears to have a small subbasal inner spine, but this is simply due to pubescence. The dentition of the front *tibiæ* is feeble, and from most directions invisible, although fairly distinct from others.

In this, as in many other species of the genus, the seventh, eighth and ninth joints appear of different shapes according to the point they are viewed from. The sixth and tenth, and even the eleventh, are also occasionally subject to such variation.

## RYBAXIS QUADRITUBERCULATA, n.sp.

♂. Colour and clothing much as in the preceding species.

*Head* with rather wider impressions than in the preceding species. Length  $1\frac{4}{5}$ -2 mm.

*Hab.*—Tasmania: Huon River, in tussocks; Hobart, Burnie, Marrawah, Waratah (A. M. Lea).

The colour is much as in the preceding species, except that the darker parts are rather less dark, and that the elytral suture is scarcely deepened in colour. The tenth joint of antennæ also although always decidedly darker than the eleventh, is occasionally no darker than the preceding ones. The antennæ at first appear to be alike in structure, but the fifth joint, although longer than the sixth, is scarcely perceptibly longer than the fourth, the sixth and seventh appear to be produced for a short distance inwards for their entire length (instead of subtriangularly, although from some directions the seventh appears subtriangularly produced), the eighth is much as in that species, whilst the tenth is rather smaller. The prothorax, elytra and abdomen are the same, but the metasternum has two small tubercles (each much smaller than the single one of the preceding species) behind each of the hind coxæ; the front trochanters are finely but acutely dentate, and the front tibiæ are rather strongly dentate at about one-third from the apex, with the space between the tooth and the apex itself emarginate; in the former species the tooth, which is very feeble, is distinctly nearer the base than the apex, and, except at the tooth itself, the curvature of the tibiæ is not interfered with. The females of the two species are practically indistinguishable.

In many respects close to *E. quadriceps*, but smaller, and fifth to eight joints not quite the same; the emargination of the front tibiæ is also distinctly nearer the apex. The two small tubercles on each side of the metasternum distinguish it from *E. adumbrata*. In some respects close to the description of *E. grandis* (♀ only known to Raffray) but smaller, and head not darker than prothorax, &c.

## RYBAXIS CRASSIPES, n.sp.

♂. Of a rather bright reddish-castaneous, elytra and legs somewhat paler, tenth joint of antennæ somewhat infuscated and conspicuously darker than eleventh. With short, pale pubescence.

*Head* with two round, closed, interocular foveæ of moderate size; with a rather large interantennal impression. Antennæ with first joint fairly stout and widest near apex, fifth distinctly longer than fourth or sixth; sixth, seventh and eighth produced on one side, ninth and tenth trapeziform, tenth distinctly larger than ninth, eleventh truncate-ovate, very little longer than tenth. *Prothorax* about as long as wide, sides strongly rounded and widest at about one-third from apex; each side near base with a large fovea, the two connected by a deep impression across middle. *Elytra* comparatively narrow at base; each somewhat membranous and obtusely produced at middle of apex; dorsal striæ deep at base and distinct to near apex, with small but numerous punctures; epipleural furrow deep, almost straight and extending to one-fifth from base and apex. Upper surface of *abdomen* with a transverse medio-basal node, and without striæ or carinæ at sides of same; lower surface flattened in middle. *Metasternum* with a small tubercle close behind each of the hind coxæ. Middle *trochanters* strongly but obtusely dentate, front still more obtusely dentate; four front femora very stout; front tibiæ rather strongly curved, very feebly dentate at about basal third; middle tibiæ rather stout and obtusely produced at apex. Length  $2\frac{1}{4}$  mm.

*Hab.*—Tasmania: Zeehan (K. Findlay).

The four front femora are unusually stout, and in many respects it agrees with Raffray's description of *E. flavipes* (from New South Wales), but ninth joint of antennæ not three times as long as eighth, the apical joint pale, and abdomen without carinæ. In Raffray's description he says: "Carinulis abdominalibus brevibus, divergentibus, et parum distantibus," but Schaufuss says: "Abdominis . . . primo prope suturam oblique bistriolato."

From some directions the sixth, seventh and eighth joints appear to be produced on one side, and the produced points then

directed forwards, the three appearing identical in this respect; but from other directions each joint appears of different shape, with the sixth decidedly larger than the eighth, and not at all pointed. From some directions the tip of the eleventh is seen to be slightly bent inwards. The subbasal prothoracic impression is produced backwards at its middle, so that the base itself appears to be in two lobes.

RYBAXIS ALEATORIA, n.sp.

♂. Bright castaneous, tarsi paler; club infuscated except apical joint, which is palest of all. With very short pale pubescence.

*Head* rather longer than usual; with a deep, round, closed fovea, of moderate size, close to each eye; and a smaller one straight in front, and just behind insertion of antennæ. Antennæ with first joint fairly stout, second subglobular, fifth about twice the length of fourth, and more than twice the length of sixth, seventh slightly produced on one side, eighth smaller and more strongly produced, ninth somewhat irregular on one side, tenth considerably larger and trapeziform, eleventh almost as long as ninth and tenth combined. *Prothorax* about as long as wide, sides strongly rounded and widest at about two-fifths from apex; with a fairly large, round fovea, on each side near base, and a much smaller one in middle, the three without connecting impressions. *Elytra* almost as long as wide; dorsal striae distinct to near apex; punctures indistinct, with a narrow marginal stria, but epipleural furrow absent. Upper surface of *abdomen* with a small medio-basal node; lower surface with a transverse depression at apex of second segment. *Metasternum* gently concave in middle. *Legs* longer than usual; front and middle trochanters obtusely dentate; front tibiae rather suddenly curved at apex. Length 2 mm.

*Hab.*—New South Wales: Sydney (A. M. Lea).

The unique male was seen by M. Raffray some years ago, but returned without comment. The tenth joint is slightly paler than the three preceding ones, but is conspicuously darker than the eleventh. From the other species having the eleventh joint



paler than the preceding ones it is readily distinguished by the sculpture of head, and under surface of abdomen, and by the absence of an impression connecting the prothoracic foveæ.

The foveæ on the head are placed exactly as on the four of a die; the interocular ones are smaller than in the three preceding species. There is an obtuse tubercle on each side of the metasternum, but the tubercles, instead of being erect, are pressed flat down, so that they overhang the hind coxæ; in consequence they are not readily seen, and at first they appear to be really attached to the coxæ.

RYBAXIS ACUTIDENS, n.sp.

♂. Of a bright pale castaneous, legs and palpi still paler, apical two-thirds of antennæ infuscated. Abdomen finely pubescent, elsewhere almost or quite glabrous.

*Head* rather large, with a fovea of moderate size close to each eye, and with a rather vague interantennal impression. *Antennæ* with first joint subcylindrical, second subglobular, fifth slightly longer than fourth, but scarcely, if at all, longer than sixth, eighth very small, ninth larger and produced on one side, tenth large, eleventh slightly narrower than tenth, but slightly longer than ninth and tenth combined. *Prothorax* distinctly transverse, sides strongly rounded and widest at about two-fifths from apex; each side near base with a large fovea, the two connected by a strongly impressed curved line, that is scarcely dilated at its middle. *Elytra* rather wide; dorsal striæ distinct almost to apex, with small but fairly numerous and distinct punctures; epipleural furrow deep, lightly curved and extending to about one-fifth from base and apex, marginal stria rather deeper than usual. Upper surface of *abdomen* with a very short oblique stria on each side of the medio-basal node; lower surface slightly flattened in middle. *Metasternum* concave along middle. *Front trochanters* each with a long thin tooth; front tibiæ moderately curved, the four hind ones longer and more noticeably curved, the hind pair spinose at apex. Length  $1\frac{1}{2}$ - $1\frac{2}{3}$  mm.

*Hab.*—W. Australia: Bunbury, Vasse River (A. M. Lea).

The dark club, which is rather larger than usual, with the acute armature of the front trochanters, render this species very distinct.

The eleventh joint is slightly paler than the tenth, but not distinctly so, and is considerably darker than the basal joints. From some directions the tenth joint appears feebly bidentate on one side, but this appearance (although alike on two specimens) may be due to the clothing. One specimen was seen by M. Raffray some years ago, but returned without comment.

RYBAXIS ATRICLAVA, n.sp.

♂. Dark reddish-castaneous, head and abdomen black; appendages, club excepted, almost flavous. Upper surface with short pale pubescence, more noticeable on abdomen than elsewhere.

*Head* with a round closed fovea of moderate size close to each eye, and with a fairly deep interantennal impression. *Antennæ* comparatively thin, first joint cylindrical, fifth slightly longer than fourth or sixth, sixth than seventh, and seventh than eighth, ninth larger, tenth still larger, eleventh rather briefly subovate, about as long as ninth and tenth combined. *Prothorax* not much wider than long, widest and strongly rounded at about one-third from apex; latero-basal foveæ and connecting impression as in the preceding species. *Elytra* moderately long, each slightly produced in middle of apex; dorsal striæ deep at base, and distinct almost to apex; with fairly distinct but irregularly distributed punctures; epipleural furrow fairly deep, lightly curved and rather nearer marginal stria than usual. Upper surface of *abdomen* with two small medio-basal nodes. *Metasternum* on each side, exactly half-way between the middle and hind coxæ, raised into a very obtuse tubercle, the apical inner portion feebly striated. *Front tibiæ* very feebly dentate at the middle; hind pair spinose at apex. Length  $1\frac{2}{3}$  mm.

♀. Differs in being thinner, antennæ shorter, abdomen convex along middle of undersurface, metasternum unarmed and not striated, and legs unarmed.

*Hab.*—Victoria: Mallee (National Museum).

The entirely dark club, curious metasternum and front tibiæ, render this species very distinct. The undersurface of the abdomen of the type-male appears to be concave along the middle and obtusely tuberculate in places, but is so gummy that I may be mistaken as to the tubercles; and, as it is rather damaged, it was not subjected to treatment to remove the gum.

The elytra, except at base and suture, are slightly paler than the prothorax. The three apical joints of the antennæ are almost black; and from no direction do any appear produced on one side. The front tibiæ from the base to the middle very feebly increase in width, and then rather suddenly decrease and become very feebly curved to the apex; from the middle, a seta projects. I have regarded them as dentate, but that is perhaps hardly correct.

RYBAXIS VARIABILIS, n.sp.

♂. Of a rather bright reddish-castaneous, appendages slightly paler, abdomen slightly darker, head still darker, sometimes almost black. With fairly uniform, pale, and rather short pubescence.

*Head* with a fairly large round closed fovea close to each eye; and with a large, shallow, interantennal depression. *Antennæ* rather long, first joint rather stout and subcylindrical, fifth slightly longer than fourth and just perceptibly longer than sixth, seventh and eighth decreasing in length, ninth slightly longer and wider than eighth, tenth decidedly larger and trapeziform, eleventh slightly longer than ninth and tenth combined. *Prothorax* almost as long as greatest width, sides widest and strongly rounded at about one-third from apex; each side near base with a large fovea, the two connected by a strong curved impression, which is slightly drawn backwards at middle; with a narrow impression almost at extreme base. *Elytra* dilated posteriorly; dorsal striæ deep at base and very distinct to near apex; with rather distinct but irregularly distributed punctures; epipleural furrow deep, straight, and short. Upper surface of *abdomen* with a transversely oblong medio-basal node; lower surface gently flattened in middle, the penultimate segment feebly concave in

middle. *Metasternum* gently depressed along middle. Four front *trochanters* each with a small but acute tooth; *tibiæ* rather long. Length  $2\text{--}2\frac{1}{2}$  mm.

♀. Differs in having shorter antennæ with smaller club, epipleural furrow shallower, abdomen rather strongly convex on under surface, *metasternum* gently convex and *trochanters* unarmed.

*Hab.*—Tasmania (National Museum), Mount Wellington, Hobart, two specimens from fungi, and others from moss (A. M. Lea).

A moderately elongate species, much the shape of *E. adumbrata*, but tenth joint not darker than eleventh, and *tibiæ* unarmed. In some respects close to description of *E. ovensensis*, but head dark and with different sculpture, and hind *tibiæ* not strongly curved at apex.

The head is sometimes but little or no darker than the prothorax, but is usually conspicuously darker; the abdomen is usually just perceptibly darker than the elytra. One specimen has the elytra (except the extreme outer and apical edges) and abdomen (except the tips of the segments) deep black. Another has the elytra and abdomen entirely black. Another has the abdomen black (except the tips of the segments) and the elytra (the discs slightly diluted) and prothorax much darker than usual. Another has the whole body of a uniform shade of reddish-castaneous, with the appendages slightly paler. In all, however, the antennæ are uniform, the tenth and eleventh joints not being at all contrasted in colour. From some directions the interocular foveæ appear to be shallowly open in front, but I think they should be regarded as closed. The epipleural furrow commences at the basal fourth, and terminates just beyond the middle, so that it is shorter than usual.

RYBAXIS HIRSUTA, n.sp.

♂. Of a rather bright reddish-castaneous, elytra (suture and base excepted) and appendages somewhat paler, With short and

rather sparse pale pubescence; in addition, with some longer hairs scattered about.

*Head* with a deep, round, closed fovea, of moderate size, close to each eye; and with a distinct interantennal depression. *Antennæ* with second joint subglobular, fifth slightly longer than fourth or sixth, ninth slightly longer and wider than eighth, tenth larger and trapeziform, eleventh rather briefly truncate-ovate, about as long as ninth and tenth combined. *Prothorax* distinctly transverse, widest and strongly rounded close to apex; with a large fovea on each side near base, and a somewhat smaller one in middle, the three connected by distinct curved lines; extreme base with a row of rather coarse but partially concealed punctures. *Elytra* rather wide, dilated to beyond the middle; with eight small basal foveæ; dorsal striæ deep at base, but less distinct elsewhere than usual; punctures sparse and indistinct; marginal stria deeper than usual but epipleural furrow absent. Upper surface of *abdomen* with a transversely elongate medio-basal node, from each side of which proceeds a distinct oblique stria; lower surface with a feeble depression in middle of second segment. *Metasternum* widely and rather strongly concave. Middle *trochanters* acutely dentate; four front tibiae moderately stout, the hind pair decidedly thinner and spinose at apex. Length  $1\frac{1}{2}$ - $1\frac{2}{3}$  mm.

♀. Differs in having shorter antennæ, with the club somewhat smaller, under surface of abdomen moderately convex, metasternum depressed along middle only, and legs unarmed.

*Hab.*—Tasmania: Huon River, Mount Wellington, Stonor(A. M. Lea).

In appearance somewhat like large specimens of *R. 5-foveata* and *R. electrica*, but the three subbasal foveæ of prothorax conspicuously joined together, although the connecting lines are rather less deeply impressed than usual.

The longer hairs appear to be absent from some of the specimens before me, but are really present, being pressed down amongst the pubescence, this being due to the treatment received. One specimen is entirely pale castaneous, probably from imma-

turity. The first joint of the antennæ is really distinctly longer than the second, but as its base is more or less concealed from certain directions, it appears to be even shorter than the second, or at least no longer. Between the antennæ, from some directions, there may be seen three impressions, the ordinary one but of rather smaller size than usual, and a smaller foveate one quite close to the base of each antenna, the three being obscurely connected together.

A male from Mount Wellington differs from the typical form in having the interocular foveæ open in front (from some directions, however, they appear closed), the elytra with more distinct punctures (especially near suture), and the dorsal striæ more distinct and longer. As in all other respects, however, even as to the longer hairs scattered about (an unusual feature in the genus), it agrees with the typical form, it is not considered advisable to regard it as more than a variety.

RYBAXIS ACANTHOSTERNA, n.sp. (Plate xxi., fig.3).

♂. Of a rather dark reddish-castaneous, elytra and appendages paler. Moderately clothed with short, pale pubescence.

*Head* with a fairly large, round, deep fovea, close to each eye, and a moderately deep depression between antennæ. *Antennæ* rather long, first joint stout, second shorter than third and scarcely, if at all, wider, fifth slightly longer than fourth and sixth, seventh and eighth shorter, ninth longer and wider, tenth distinctly longer than wide, eleventh very decidedly curved, its inner base concave. *Prothorax* moderately transverse, sides widest and strongly rounded at about apical third; each side near base with a large fovea, the two connected by a strong curved impression, which is drawn backwards, but scarcely foveate, at its middle. *Elytra* about as long as wide; dorsal striæ deep at base and distinct to beyond the middle; punctures rather indistinct; epipleural furrow deep, lightly curved, and extending to about one-fifth from base, and one-fourth from apex. Undersurface of *abdomen* concave in middle, a distinct tubercle projecting backwards from each side of the depression on third segment. *Metasternum* gently and



widely concave, but just behind intercoxal process of mesosternum with a strong, acutely conical tubercle or spine. *Legs* rather long; front trochanters obtusely dentate; front tibiæ thin, with a distinct median tooth. Length  $2\frac{1}{8}$  mm.

*Hab.*—Queensland (Taylor Bros.), Coen (H. Hacker).

The antennæ approach those of *R. hyalina*, but the eleventh joint is distinctly longer and thinner, and slightly concave on one side of base, the ninth and tenth are also longer. But the whole insect is larger, the legs are longer, and the metasternum and abdomen are very different. The species is perhaps the most distinct one of its genus.

Of the two specimens before me, one has the head conspicuously darker than elsewhere; the other is distinctly paler, with the head but little darker than the prothorax. From some directions the tenth joint appears to be but little longer than wide, but from others it appears almost twice as long as wide; the ninth is also of somewhat irregular shape. From some directions the dorsal striæ appear geminate towards the base.

#### RYBAXIS BRYOPHILA, n.sp.

♂. Bright reddish-castaneous, elytra and appendages slightly paler. With short, depressed, pale pubescence.

*Head* with a large round fovea close to each eye, and one of larger size in the middle in front, but slightly behind antennæ. Antennæ comparatively stout, second and fifth joints almost as long as wide, third and fourth feebly transverse, sixth moderately, seventh, eighth and ninth strongly transverse, tenth large, its inner apex acutely produced, eleventh briefly ovate, very little longer than tenth. *Prothorax* distinctly transverse, sides widest and strongly rounded at about one-third from apex; each side near base with a large fovea, middle with a somewhat smaller one, the three connected by distinct but narrow lines. *Elytra* dilated posteriorly, but not to apex; with six small basal foveæ; dorsal striæ sharply defined on basal three-fifths, but then vanishing; with numerous fairly distinct punctures; epipleural furrow short. Lower surface of *abdomen* gently flattened in



middle. *Metasternum* widely and shallowly concave. Front *trochanters* rather acutely dentate; front tibiæ regularly increasing in width, but near apex suddenly and strongly emarginate to apex itself, the emarginations rather densely clothed, middle tibiæ rather acutely mucronate at apex, the hind pair less noticeably so. Length  $1\frac{1}{2}$ - $1\frac{2}{3}$  mm.

♀. Differs in having somewhat shorter antennæ, with none of the joints produced inwards, the tenth much smaller, the eleventh simple at its inner base and fully twice the length of the tenth, the undersurface of abdomen convex, metasternum less widely and more shallowly concave, and legs unarmed.

*Hab.*—Tasmania: Hobart, Mount Wellington, New Norfolk.

The body is somewhat as in *R. 5-foveata*, but the antennæ are stouter and shorter, tenth joint different, abdomen non-carinate, etc. On some specimens the elytra are of a uniform shade of colour, but on others the suture, sides and apex are slightly darker than elsewhere. The medio-frontal cephalic fovea is larger than the interocular ones (with which, from some directions, it appears to be vaguely connected), closed in front and not circular. The eleventh joint of the male on the undersurface has a slight depression in which the produced inner apex of the tenth can be fitted. From some directions the eighth and ninth are seen to be produced inwards. The epipleural furrow is short; it commences and is fairly deep at about the basal fifth, but rapidly shallows and terminates about the middle; in the female it is less distinct than in the male.

Abundant in moss, and a few specimens taken from tussocks, and rotting leaves.

RYBAXIS PALLIDA, n.sp.

♂. Of a rather pale castaneous, appendages still paler. With short, pale, and, for the genus, fairly dense pubescence.

*Head* comparatively wide, with (for the genus) a rather small fovea close to each eye, and with a rather shallow subfrontal impression. Antennæ comparatively thin, second joint fairly large, third to sixth of about even size, seventh and eighth somewhat smaller, ninth slightly larger, and tenth slightly larger still,

eleventh ovate, slightly longer than the three preceding joints combined. *Prothorax* strongly transverse, sides strongly rounded, widest close to apex; with a rather large, and somewhat transverse fovea, on each side near base, and with a small round median one; with numerous small punctures. *Elytra* moderately transverse; dorsal striæ distinct, more noticeably curved than usual, and terminating at apex itself close to the suture; with numerous small punctures; marginal stria distinct but epipleural furrow absent. *Abdomen* somewhat flattened along middle of under surface, the apical segment with a rather shallow longitudinal impression. *Metasternum* rather widely concave in middle; but the depression closed posteriorly. Four front *trochanters* obtusely dentate; tibiæ rather long. Length  $1-1\frac{1}{5}$  mm.

*Hab.*—Queensland: Cairns (H. Hacker's No. 204).

In general appearance fairly close to *R. electrica*, but the middle trochanters distinctly dentate, and tenth joint of antennæ much smaller, so that the eleventh appears to be conspicuously larger, although it is about the same size in both species; and, in fact, the club appears to be one-jointed only.

The cephalic foveæ are placed as in the preceding species, but the two have little else in common. The three prothoracic foveæ are disconnected, but from some directions a faint impression can be seen proceeding inwards from each of the lateral foveæ, but not quite touching the median one.

RYBAXIS MACROCEPHALA, n.sp. (Plate xxi., fig. 4).

♂. Bright reddish-castaneous; elytra and appendages slightly paler. With short, pale pubescence.

*Head* much larger, wider, and more convex than usual; with a small fovea fairly close to each eye, but not depressed between antennæ; with rather dense distinct punctures. Antennæ with third and fourth joints slightly shorter than second and fifth, sixth to ninth still shorter, tenth larger and somewhat transverse, eleventh large, ovate, about as long as the four preceding joints combined. *Prothorax* distinctly transverse, sides widest and strongly rounded towards apex; with dense clearly defined punctures; with a fairly

large fovea on each side near base, and a small one in middle. *Elytra* not much wider than long, dorsal striæ finely impressed to just beyond the middle, and then vanishing; marginal stria deep, but epipleural furrow absent. Undersurface of *abdomen* with two conspicuous parallel ridges extending to apex of second segment, third and fourth not traceable across middle. *Metasternum* strongly concave in middle, the concavity bounded behind by a thin intercoxal lamina; with a small fovea close to each of the middle coxæ. *Tibiæ* rather long, especially the hind pair, which are also rather strongly curved at apex. Length  $1\frac{3}{4}$  mm.

*Hub.*—N. S. Wales: Illawarra, Grose Valley, Blue Mountains; a single male from each locality (H. J. Carter).

The enormous head (in the female it is probably smaller) readily distinguishes it from all other species of the genus (or indeed of the family) known to me. The medio-basal fovea of the prothorax is not connected with the sides, although there is an impression on each side which almost touches it and the lateral ones; the species therefore belongs to M. Raffray's second group of the genus, although he would possibly regard it as representing a new genus.

The interocular foveæ are smaller and more distant from the eyes than usual; from some directions they appear to be closed, but from others a vague depression can be seen opening out in front from each of them. The antennæ appear to have the club one-jointed, as the tenth joint, although decidedly longer and wider than the ninth, is very much smaller than the eleventh. There are fairly numerous punctures on the elytra, but they are much less distinct than those on the prothorax.

The males of the species here described may be tabulated as follows:—

A. Foveæ of prothorax disconnected.

a. Abdomen with two conspicuous parallel ridges on under surface ..... *macrocephala*.

aa. Abdomen without such ridges.

b. Metasternum with two depressed tubercles overhanging coxæ ..... *aleatoria*.

bb. Metasternum without tubercles ..... *pallida*.

## AA. Foveæ of prothorax connected.

## B. Front tibiæ edentate.

c. Antennæ of uniform colour..... *variabilis*.cc. Antennæ with club dark ... .. *acutidens*.

## BB. Front tibiæ dentate or emarginate.

C. Epipleural furrow absent ..... *hirsuta*.

## CC. Epipleural furrow present.

D. Metasternum without tubercles..... *bryophila*.DD. Metasternum with one conspicuous tubercle *acanthosterna*.DDD. Metasternum with four small tubercles. *quadrituberculata*.

DDDD. Metasternum with two tubercles.

E. Four front femora very stout..... *crassipes*.

EE. Femora not conspicuously stout.

F. Tubercles much nearer hind than  
middle coxæ..... *parvidens*.FF. Tubercles equidistant from mid-  
dle and hind coxæ..... *atriclava*.

## RYBAXIS HARTI Blackb.

In these Proceedings for 1900 (p.151), M. Raffray stated that this name was a synonym of *R. Isidoræ*, basing this statement on the description of the intermediate tibiæ. There are before me, however, two species which have the four front tibiæ peculiar, and these I believe to be *R. Harti* and *R. Isidoræ*.

The legs and antennæ of *R. Isidoræ* (the male which I refer to *R. Isidoræ* agrees with the description of *R. antilope*; it is rather larger than the female) are stouter than in *R. Harti*, the front tibiæ are more noticeably armed, and the median pair with the armature of the strongly emarginated portion rather less conspicuous; the second joint of antennæ is also considerably larger. The elytral striation is more pronounced, and the upper surface of the abdomen has the oblique impressions still shorter. But the two are readily distinguished by the terminal joint of the antennæ. In *R. Harti* the apical joints are infuscate (Blackburn says "apicem versus infuscatiss"). In *R. Isidoræ* the eleventh joint is conspicuously paler than the tenth (Schaufuss says "articulo ultimo . . . pallidiss").

The type of *R. Isidoræ* was from King George's Sound; my specimens (sexes) are from Vasse (not far from the Sound) and Swan River.

RYBAXIS ISIDORÆ Schauf. (*R. antilope* Raffr. (?)).

*R. Harti* is not a synonym of this species (see above note). But I think the male has been described by M. Raffray under the name of *R. antilope*.

RYBAXIS ELECTRICA King.

This is probably the commonest species of *Pselaphidæ* in Tasmania. It may be taken abundantly in moss and fallen leaves, and on fence-tops, etc., at dusk.

Var. A.—Numerous Tasmanian specimens before me appear to represent a variety. They differ from the typical form in being slightly larger, slightly more depressed, and with the small basal foveæ of elytra rather more pronounced. The colour also is rather brighter. Some of the larger of these specimens closely resemble *R. 5-foveata*, but have the eleventh joint of antennæ distinctly smaller.

PSELAPHUS FOVEIVENTRIS, n.sp.

♂. Bright reddish-castaneous, palpi and tarsi paler. Very sparsely clothed with pale depressed pubescence; elytra not fringed at apex, but with the pubescence forming three feeble lines on each. Undersurface with dense white pubescence on base of abdomen, on mesosternum and at apex of prosternum.

*Head* rather narrow, with a continuous median groove but somewhat irregular between eyes, without tubercles between eyes. Antennæ long and thin, all the joints distinctly longer than wide, first longer than the three following combined. Palpi elongate, club of apical joint elliptic, rather more than one-third the length of peduncle, which is moderately curved. *Prothorax* much longer than wide, rather strongly convex; with four subbasal foveæ, all feebly connected together, the outer ones produced slightly backwards. *Elytra* much shorter than abdomen, not

much wider than long; sutural striæ distinct, the others feeble. Under surface of *abdomen* with a rather deep, suboval, median fovea. Metasternum with a wide, polished, median excavation, continuous throughout but narrowed to base. Length  $2\frac{1}{4}$ - $2\frac{3}{8}$  mm.

♀. Differs in the metasternum being flattened along middle, and the abdomen without a fovea.

*Hab.*—Tasmania : Mount Wellington, Hobart, Waratah (A. M. Lea).

From some directions each side of base of prothorax appears to be supplied with two deep grooves, with a narrow carina between them. The species is longer and narrower, with the basal joint of antennæ longer than usual, and the sexual characters very pronounced. Of the twelve specimens before me, six were taken from moss, and six from fallen leaves.

PSELAPHUS TUBERCULIVENTRIS, n sp.

♂. Bright reddish-castaneous, palpi and tarsi somewhat paler. Sparsely clothed with pale, subdepressed pubescence; elytra fringed at apex, and with feeble lines of pubescence on disc. Under surface with dense white pubescence at base of abdomen, on mesosternum, apex of prosternum and middle of neck.

*Head* moderately long, with a distinct median channel from base to apex, but irregular between eyes. Antennæ moderately long, first joint as long as the three following combined, second to eighth but little, or not at all, longer than wide, ninth and tenth longer than wide, and combined about equal to eleventh. Palpi elongate, club of apical joint about half the length of peduncle, this distinctly curved. *Prothorax* very distinctly longer than wide, with five subbasal impressions. *Elytra* much shorter than abdomen, about as long as wide; sutural stria distinct, discal fairly distinct. Undersurface of *abdomen* strongly convex in middle, and at its highest part with a strongly raised truncated tubercle. Length  $2\frac{1}{2}$  mm.

♀. Differs in having shorter antennæ and abdomen non-tuberculate.

*Hab.*—Tasmania: Mount Wellington, Hobart; four specimens, from moss(A. M. Lea).

In general appearance close to the preceding species, but the antennæ shorter, elytra fringed at apex, and the male characters very different.

The head appears to have, from some directions, two conspicuous interocular tubercles, but these are due principally to the median groove, although partly also to their own elevation. The medio-basal impression on the prothorax is separated from the others by a feeble carina on each side; the lateral ones are longitudinal, the intermediate ones transverse. From some directions there appears to be a strong transverse subbasal groove slightly interrupted on each side of middle.

PSELAPHUS VILLOSUS, n.sp.

♂. Bright reddish-castaneous, legs and antennæ paler, tarsi and palpi somewhat flavous. Clothed with long straggling dark setæ, on the elytra(which are not fringed at apex) rather sparser on disc than elsewhere. Under surface with dense pale pubescence at base of abdomen, on each side of mesosternum and on apex of prosternum.

*Head* moderately long, with a wide but feeble median channel. Antennæ moderately long, first joint as long as second and third combined, second stouter and slightly longer than third, third to eighth about as long as wide, ninth and tenth subglobular, not longer than wide, their combined length about equal to eleventh. Palpi elongate, club of apical joint more than half the length of peduncle. *Prothorax* much longer than wide, with a moderate and somewhat curved subbasal impression, dilated in places by five feeble foveæ, of which the lateral ones are oblique and almost isolated. *Elytra* much shorter than abdomen, much wider than long; sutural and discal striæ distinct, the latter strongly curved and continuous. Basal segment of *abdomen*, on undersurface of first segment, with a wide, shallow, median, longitudinal impression. Length  $1\frac{1}{2}$ - $1\frac{3}{4}$  mm.



♀. Differs in having somewhat shorter antennæ, and legs and abdomen without a longitudinal impression.

*Hab.*—Tasmania : Launceston (A. M. Lea).

In Raffray's Table would be associated with *P. pilosus* and *P. longepilosus*; from the former distinguished by the non-tuberculated head, and from the latter by the cephalic groove being feeble posteriorly and sides of prothorax non-carinate.

The cephalic groove from some directions appears to be terminated between the eyes, but from others is seen to be feebly continued to the neck. From some directions there appear to be two feeble interocular tubercles, but this appearance is due entirely to the groove.

*PSSELAPHUS BRYOPHILUS*, n.sp.

♀. Bright reddish-castaneous, appendages paler. Clothed with very sparse, long, straggling, dark setæ. Undersurface with dense white pubescence at base of abdomen, on mesosternum, apex of prosternum and head.

*Head* rather long, channel wide and shallow in front, deeper and narrower behind, but interrupted between eyes. Antennæ long and thin, all the joints distinctly longer than wide, first slightly longer than second and third combined. Palpi long and thin, club of apical joint less than half the length of peduncle. *Prothorax* much longer than wide, sides evenly rounded; with a strong and somewhat curved subbasal impression, connecting five small foveæ, of which the lateral ones are longitudinal and almost disconnected. *Elytra* much shorter than abdomen, distinctly wider than long, base narrower than usual; subsutural and discal striæ distinct, the latter narrowly impressed and terminated before apex. *Legs* rather thinner than usual. Length  $1\frac{1}{2}$  mm.

*Hab.*—Tasmania : Frankford, in moss (A. M. Lea).

Thinner than the preceding species, antennæ considerably longer, long hairs longer and sparser (on the elytra there are only seven of them on the type), and head distinctly grooved to neck. It has much the size and appearance of *P. elongatus*,

but antennæ longer and body with long clothing. The head from some directions appears to be feebly lobed, but there are no distinct interocular tubercles.

**PSELAPHUS PULCHELLUS, n.sp.**

♀. Bright reddish-castaneous, some parts darker. Clothed with long, straggling, dark setæ, on the elytra (which are feebly fringed at apex) confined to sides, and rather denser on apical half of abdomen (where there are a few pale, short setæ interspersed) than elsewhere. Undersurface with dense white pubescence at base of abdomen, on mesosternum and head.

*Head* elongate, with a continuous median channel, interrupted in middle by a small granule; with two tubercles between eyes. Antennæ rather long, first joint as long as second and third combined, ninth and tenth rather long, their combined length distinctly more than that of eleventh. Palpi elongate, club of apical joint one-third the length of peduncle. *Prothorax* distinctly longer than wide, base much wider than apex; with a rather strong, subbasal impression, connecting five shallow foveæ, of which the lateral ones are deeper, longitudinal and almost isolated. *Elytra* no shorter than abdomen, about as long as wide, apex not twice the width of base; sutural and discal striæ distinct, the latter narrow, rather strongly curved and continuous throughout. Length  $2\frac{1}{3}$  mm

*Hab.*—Tasmania: Frankford (A. M. Lea)—New South Wales: Illawarra (H. J. Carter).

A beautiful species, with long hair somewhat as in *P. pilosus* and the two preceding species, but otherwise very different. In some respects close to *P. longepilosus*, but head conspicuously bituberculate and sides of prothorax not carinate. The elytra are also without long hairs except at the sides.

The elytra are brightly castaneous, but somewhat darker along suture and apex, where the colour is much the same as that of head and upper surface of abdomen; the prothorax is of a chocolate-brown. The antennæ are slightly paler than the head, but darker than the legs, except that the knees are infuscated.

The palpi are almost flavous, but with the upper surface of the club as dark as the rest of the head. From some directions the tubercles between the eyes are very conspicuous, and from others there appear to be two conspicuous tubercles between the bases of the antennæ.

*PSELAPHOPHUS BINODOSUS*, n.sp.

♂. Reddish-castaneous; upper surface, except elytra, darker; palpi flavous. Clothed with fine, recurved, dusky pubescence.

*Head* with a fairly deep but rather small fovea close to each eye; antennary ridges separated by a shallow depression. Antennæ rather thin, passing middle coxæ, first joint fairly stout, as long (when seen from below) as the two following joints combined, second slightly longer than third, third to eighth small and subequal, ninth larger and subglobular, tenth larger again, eleventh somewhat irregularly ovate. *Prothorax* about as long as wide, gently increasing in width to near apex, near base with a strong and slightly curved impression; marked with a few indistinct punctures in middle, and terminated on each side by a short, deep, longitudinal impression. *Elytra* wider than long, each with a strong sutural, and a strong curved discal stria, becoming subfoveate at base. *Abdomen* with second segment large, and on undersurface with a shallow median impression (scarcely a fovea). *Metasternum* with a large, but rather shallow apical impression. Undersurface of head with two very distinct, round, flattened tubercles. *Femora* stout, *tibiæ* lightly curved. Length  $1\frac{5}{8}$ -2 mm.

♀. Differs in having undersurface of abdomen convex, metasternum narrowly impressed in middle of apex, femora thinner, and *tibiæ* straighter.

*Hab.*—Tasmania: Burnie, Frankford (A. M. Lea).

Larger and wider than *P. clavatus*, *P. unicolor*, or *P. bicolor* and sculpture of head somewhat different. From the description and figure of *P. atriventris*, the absence of a single large interocular fovea at once distinguishes it. On one specimen the upper surface of abdomen (except the margins) is blackish-brown.

## TYRAPHUS MAJOR Sharp.

There are before me three of each sex of a species that agrees well with the description of this species. But one specimen was before Sharp, and he considered it a male, although stating that the "metasternum and hind body are not impressed." The type, however, was a female. The male differs in having a distinct tubercle on the middle of the undersurface of the large abdominal segment; seen directly from above, this tubercle appears as a short carina, but from the sides it appears subtriangular.

*Hab.*—W. Australia : Vasse (in flood-débris).

## CTENISOPHUS NOCTIVAGUS, n.sp.

♂. Pale reddish-castaneous, appendages somewhat paler. Moderately clothed with pale, scale-like setæ, denser at apex of elytra and on the basal segments of abdomen than elsewhere.

*Head* with two very shallow foveæ between eyes. *Antennæ* rather long, first joint as long as second, but from some directions apparently shorter, second stouter and slightly longer than third, third to seventh small and subequal, eighth to eleventh about three-fifths the total length of antennæ, eighth cylindrical, distinctly longer than ninth or tenth, these subequal *inter se*, eleventh elongate-elliptic, slightly longer than ninth and tenth combined. Three apical joints of palpi each with a long, thin, appendage. *Prothorax* lightly transverse, widest near apex, thence very feebly decreasing in width to base; with a large but rather shallow sub-basal fovea. *Elytra* each with a distinct sutural stria, and a rather less distinct, and somewhat curved, discal one. *Metasternum* deeply sulcate. *Abdomen* with third segment large; its undersurface somewhat flattened (scarcely impressed) in middle. *Legs* long and thin. Length 1 mm.

♀. Differs in having shorter antennæ, of which the ninth joint is no longer than the eighth, the tenth distinctly longer and stouter than the ninth (but shorter than in the male), and the eleventh joint shorter and stouter than in the male and almost as long as the four preceding joints combined. The third ventral segment is also regularly convex.

*Hab.*—Queensland: Cunnamulla, attracted to lights(H. Hardcastle)—New South Wales: Tamworth(A. M. Lea).

Close to the description of *C. parvus*, but base of prothorax decidedly narrower than near apex. Very close to *C. vernalis*, but smaller, eighth joint slightly longer and thinner, and spines on undersurface of head much less distinct. The absence of an abdominal fovea in the male distinguishes it from *C. rivularis*.

CTENISOPHUS LONGICORNIS, n.sp. (Plate xxi., fig.5).

♂. Of a rather dark reddish-castaneous, appendages somewhat paler, abdomen darker, except at tip. Clothing much as in the preceding species.

*Head* with two round and rather shallow foveæ between eyes. Antennæ decidedly longer than usual; first joint stouter than second and slightly longer(but from some directions apparently shorter), second stouter and slightly longer than third, third to seventh small and subequal; eighth to eleventh about two-thirds the total length of antennæ; eighth cylindrical, almost the length of ninth and tenth combined, ninth and tenth subequal, eleventh elongate-subelliptic, distinctly longer than ninth and tenth combined. Three apical joints of palpi each with a long thin appendage. *Prothorax* moderately transverse, sides widest at apical third, thence distinctly decreasing in width to base, which is not much wider than apex; with a fairly large but rather shallow subbasal fovea. *Elytra* each with a strong sutural stria, and a lightly curved discal one not quite so strongly impressed; with numerous distinct punctures. *Metasternum* deeply sulcate. *Abdomen* with third segment large, its under surface feebly flattened (not at all impressed) in middle. *Legs* long and thin. Length  $1\frac{1}{4}$  mm.

♀. Differs in having shorter antennæ, with the third to ninth joints short and subequal, the tenth stouter and longer than ninth(but much shorter than in male) and the eleventh shorter and stouter than in the male, and as long as the four preceding combined.

*Hab* —Tasmania: Jordan River, in flood-débris(A. M. Lea)

The long eighth joint of the antennæ of the male readily distinguishes it from all other species known to me. *C. Andersoni* (certainly described from a male) has the eighth joint of the same length; but the species is described as about twice the length of the present one, and is the largest as yet recorded from Australia.

#### NARCODES VARIA King.

A cotype of this species is before me; its front trochanters are obtusely tuberculated, scarcely armed, and its ventral segments are convex, so it is probably a female. The front angles of its prothorax appear from some directions as small subconical tubercles. King says "angulis anticis acutis" and again "the angles in front being acute." In his figure however (Plate v., fig. 1) the apices are not shown as acute as in my specimen, and the elytra are figured as considerably longer than they really are\*. King described *N. pulchra* as a different species, but afterwards (p. 106) stated it was the male of *N. varia*; he did not, however, describe the abdomen, nor the armature of its legs.

A specimen from Mount Kosciusko agrees fairly well with King's description of *N. pulchra*, and with his figure of the palpi (Plate v., fig. 2a), except that the joints are more inflated towards the apex and thinner towards the base. The colour, however, is not as described "Fumosus, maculis nigris irregularibus" but is of an almost uniform dingy brown; this, however, may be immaterial. Its front trochanters are large, and each has a strong tooth directed outwards and about the size of that on the femur, which is rather larger than on the cotype of *N. varia*. Its ventral segments are somewhat flattened along middle, and the second is shallowly transversely impressed.

#### NARCODES NIGRIVENTRIS, n.sp. (Plate xxi., fig. 6).

♂. Black, head and prothorax dark brown, elytra and legs reddish-castaneous, but club and femora more or less infuscated. Clothed with short and pale, but rather stiff pubescence.

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\*In a later note, however, he states that the figure is unsatisfactory.



*Head* distinctly transverse, very little wider across eyes than at extreme base; with a narrow depression between antennary ridges, and with two small interocular foveæ; coarsely and densely punctate. *Antennæ* passing middle coxæ, first joint subcylindrical, its base partially concealed, second slightly shorter and stouter than third, the others to eighth feebly decreasing in length, ninth about twice as long and twice as wide as eighth, tenth slightly larger than ninth, eleventh subovate, as long as ninth and tenth combined. *Prothorax* transverse, sides very little rounded, base not much narrower than greatest width, which is near apex; with a large, shallow, medio-basal impression, and a feeble subbasal one on each side; punctures as on head. *Elytra* widely transverse, much wider at apex than at base; dorsal striæ traceable almost to apex; with several very feeble depressions; coarsely and densely punctate. *Abdomen* with second and third segments large and dilated posteriorly, fourth parallel-sided, fifth and sixth decreasing in width; lower surface with a large shallow depression. *Metasternum* densely punctate, flat in middle. *Legs* rather long; front trochanters each with two small acute teeth of almost equal size; front femora acutely dentate near base; middle trochanters each moderately acutely dentate; four front tibiæ somewhat curved and obtusely spurred at apex, hind tibiæ longer, less curved, and not spurred. Length  $2\frac{1}{4}$ - $2\frac{1}{2}$  mm.

♀. Differs in having the antennæ shorter, with the club somewhat smaller; prothorax with sides slightly more rounded, and abdomen gently convex on undersurface.

*Hab.*—Tasmania: Evandale Junction, in tussocks (A. M. Lea).

Readily distinguished from *N. varia* by the front angles of the prothorax rounded off in both sexes, and by the bidentate front trochanters also of both sexes. The abdomen and metasternum are also darker than the other parts of the body.

There is no sexual difference in the armature of the front legs. The clothing appears to be slightly maculate, but this is due more to slight inequalities of the surface and its disposition, than to shades of colour. Along the upper surface of the abdomen there appear to be three very vague stripes. The palpi are peculiar;



the second joint is long, with the basal half thin and strongly curved, and the apex inflated, third short and subovate, but produced at apex into a long and thin spur, fourth thin at the base and dilated towards apex. The medio-basal prothoracic impression is not very distinct.

PALIMBOLUS FRATER, n.sp.

♂. Reddish-castaneous, appendages paler, upper surface of head, prothorax, and abdomen dark brown or black, shoulders and apex of elytra and knees more or less infuscated. With rather dense pubescence, paler on under than on upper surface.

*Head* with a wide and rather shallow fovea close to each eye, a feeble medio-basal impression, and a deep frontal one. *Antennæ* comparatively stout, first joint as long as second and third combined, second to eighth feebly decreasing in length but of even width, ninth strongly transverse and wider than eighth, tenth slightly longer and wider than ninth, eleventh ovate, almost as long as eighth to tenth combined. *Prothorax* slightly longer than wide, with a deep medio-basal impression, narrowly connected with extreme base, each side with a strong impression, somewhat dilated near base, interrupted near middle and traceable almost to apex. *Elytra* about as long as wide; with four small basal foveæ and numerous minute punctures. *Metasternum* with a wide shallow median impression. Undersurface of *abdomen* with a wide shallow impression, common to four segments. Middle *trochanters* strongly, the hind ones very feebly, armed; hind *tibiæ* with a short, subapical spur. Length  $2\frac{2}{3}$ -3 mm.

♀. Differs in having somewhat thinner antennæ, metasternum flat along middle, abdomen gently convex on undersurface, and legs unarmed.

*Hab.*—Tasmania: New Norfolk, in tussocks of grass (A. M. Lea).

In general appearance very close to the species described by Raffray as *P. Victorie* of King, but the male with thinner antennæ, the apical joint of which is without an oblique impression on its undersurface, abdomen without an obtuse tubercle

towards the sides of the fourth segment, the impression shallower and different at apex, the spurs of the trochanters shorter, and the hind tibiæ very different. The spurs of the hind tibiæ are readily seen from most directions, but they are much smaller than in the other described species, and appear to consist of a few setæ forming a small fascicle. The females are rather shorter and more compact, but otherwise much as in *P. Victorie*. From the male of *P. mirandus* (to which it is closer) it differs in the abdomen being wider, with its impression more pronounced and apex different, the metasternum not bifoveate in front, and the hind tibiæ feebly spurred.

*PALIMBOLUS FEMORALIS*, n.sp.

♂. Pale castaneous. Rather densely pubescent.

*Head* with a large shallow fovea close to each eye, with an impression from base to apex, deep at apex, fairly distinct at base, but scarcely traceable on middle. *Antennæ* not very stout, first joint slightly curved, slightly longer than second and third combined, fourth to eighth of about even size and each feebly transverse, ninth larger and moderately transverse, tenth slightly larger than ninth, eleventh ovate, as long as ninth and tenth combined. *Prothorax* and *elytra* much as in the preceding species. *Metasternum* with a large semicircular fovea behind each median coxa, each fovea about two-thirds the length of the metasternum itself. Undersurface of *abdomen* with a wide shallow depression common to several segments. Four hind *trochanters* strongly dentate; front femora somewhat curved and each with a strong obtuse tooth, which is provided at apex with a thin elongate fascicle; hind tibiæ with a strong acute spur at about one-fourth from apex. Length  $2\frac{3}{4}$  mm.

*Hab.*—Australia (T. Blackburn).

A single male, without locality, given to me years ago by the Rev. T. Blackburn as *Tyrus mirandus* Sharp; but evidently not that species, although with similar hind tibiæ. The front femora, however, are very remarkable, and as a species before me (see below) agrees perfectly with Sharp's description of *T. mirandus*,

I prefer to regard that one as correctly identified. From that species it differs (besides in the front femora) in the metasternum having the basal foveæ considerably larger, the four hind trochanters more acutely armed, and the apex of abdomen somewhat different. The curvature of the basal joint of antennæ is not visible from above.

Although the type appears to be immature, it has been described, as the remarkable front femora readily distinguish it from all previously described species.

PALIMBOLUS ELEGANS, n.sp. (Plate xxi., fig.7).

♂. Reddish-castaneous, legs, palpi, elytra, and upper surface of abdomen somewhat paler; elytra somewhat infuscated on sides near base and apex, and on suture at apex; upper surface of abdomen feebly infuscated in places. With rather dense but somewhat unevenly distributed and more or less golden pubescence.

*Head* rather narrower than usual, strongly convex, with a shallow impression on each side near summit of convexity, with a deep impression in front. *Antennæ*, for the genus, rather thin, first joint as long as second and third combined, fifth slightly longer than fourth or sixth, eighth not transverse, ninth and tenth rather large and feebly transverse, eleventh ovate, scarcely as long as ninth and tenth combined. *Prothorax* much longer than wide, strongly convex, with a rather large but shallow medio-basal impression, each side with a continuous impression, but somewhat irregular about middle. *Elytra* at base much wider than widest part of prothorax, sides increasing in width to near apex, with fairly distinct but irregularly distributed punctures, and with several basal impressions. *Abdomen* with stronger margins than usual, those of the third segment strongly incurved; undersurface with a strong transverse fovea on fourth segment. *Pygidium* entirely ventral, with a distinct median fovea. *Metasternum* strongly convex. *Hind trochanters* strongly and acutely dentate; hind tibiæ with a short acute spur at apical third. Length  $2\frac{1}{2}$ - $2\frac{3}{4}$  mm.

♀. Differs in having head and metasternum less convex, abdomen non-foveate and with normal margins, and legs unarmed.

*Hab.*—Tasmania: Mount Wellington, in moss; Ulverstone, Frankford, Waratah(A. M. Lea).

The strongly convex head and metasternum, with the narrow prothorax of this beautiful species, are sufficient to distinguish the females from those of all other species known to me. The strong fovea on the fourth ventral segment of the male is very distinctive.

The hind tibiae are spurred somewhat as in *P. mirandus* and *P. femoralis*, but the spur is more distant from the apex, although less distant than in the figure of *P. puncticollis*. The infuscation of parts of the elytra and abdomen is not very deep, but is readily seen.

PALIMBOLUS FOVEICORNIS, n.sp.

♂. Reddish-castaneous; elytra and appendages more or less flavous. Clothing rather long and moderately dense.

*Head* with three interocular foveæ, of which the median one is slightly posterior to the others, these almost touching the eyes; with a strong depression between the interantennary ridges. Antennæ fairly stout, extending to middle coxæ, first joint cylindrical, as long as three following combined, ninth and tenth fairly large and transverse, eleventh briefly ovate, its undersurface strongly impressed or foveate towards base. *Prothorax* with sides strongly inflated slightly in advance of middle; with three longitudinal foveæ, the median one confined to the basal third, but with a vague impression traceable from it almost to apex, the lateral ones distinct to in front of the middle; punctures rather indistinct. *Elytra* very decidedly wider than long, sides strongly dilated to apex; with four basal foveæ; punctures indistinct. *Abdomen* decidedly wider than elytra, and about twice as long; undersurface flattened along middle and scarcely impressed. *Metasternum* depressed along middle. *Hind tibiae* with a strong subapical spur. Length  $2\frac{1}{2}$  mm.

*Hab.*—New South Wales: Sydney(H. J. Carter).

Readily distinguished from all previously described species by the conspicuous fovea on the undersurface of the eleventh joint. The impressions on the ventral segments are so feeble that from most directions they appear to be absent. The spur of the hind tibiæ is so placed that the apex itself appears to be wide and triangularly notched. The elytra are shorter even than in *P. mirandus*. *P. armatus*, described as having shorter elytra than in *P. Victorice*, has the metasternum and abdomen very different.

PALIMBOLUS DIMIDIATUS Raffr.

Only the female of this very distinct species was known to Raffray.

The male has the antennæ slightly longer and more thickened at apex than in female, but with the long basal joint no longer; the prothorax wider near apex and narrower at the base; the undersurface with a strong impression from middle coxæ to apex of abdomen; a strong obtuse median tubercle on each side of impression on metasternum; an obtuse tubercle on each of the four hind trochanters; and the hind tibiæ curved, somewhat inflated and pilose about middle, and thence to apex concave; at about their apical third there is also a feeble spur, indistinct or invisible from most directions.

*Hab.*—W. Australia: Bridgetown, Swan River.

PALIMBOLUS VICTORIÆ King.

The species described by Raffray as probably *P. Victorice* is the commonest of all the larger species of *Pselaphidæ* occurring in moss in Tasmania; and the males are easily recognisable by the undersurface of the apical joint of the antennæ, four hind trochanters, abdomen and hind tibiæ. Raffray describes the hind tibiæ as "posticis intus ante apicem calcare maximo, lato, compresso et laminato armatis" and his figure (These Proceedings, 1900, Pl. x., fig. 39) agrees with this description; but the spur is not solid as it appears at first sight, and is really a compressed fascicle of setæ or hair, evenly truncated. When stuck together by gum, however, it appears really solid, no matter how examined with a pocket-lens.

## PALIMBOLUS MIRANDUS Sharp.

There are three males from Victoria (Victorian Alps and Bright) before me, which appear to belong to this species, referred by Sharp, with doubt, to *Tyrus*. Sharp does not mention the front femora, but in the specimens under consideration these are fairly stout, curved, and from some directions appear concave on the lower or inner surface. The hind tibiae are spinose near the apex, the spine being at the same position as in *P. Victoriae*; but of very different shape from that of that species.

## TYROMORPHUS SPECIOSUS King\* (Plate xxi., fig. 8).

♂. Dark reddish-castaneous, palpi somewhat paler. With fine pale pubescence, denser on abdomen than elsewhere.

*Head* longer than wide; with two large round interocular foveæ, and with a depression between antennary ridges; with moderately distinct punctures. Eyes very prominent. Antennæ long, first joint cylindrical, slightly longer than second and third combined, third distinctly longer than second, slightly longer than fourth and seventh, and the length of fifth and sixth, eighth short, ninth stouter and about twice as long as eighth, tenth slightly stouter and slightly shorter than ninth, eleventh elliptic-ovate, almost as long as ninth and tenth combined. Palpi rather long, first joint very short, second almost as long as third and fourth combined, its basal third thin, the apical two-thirds subelliptic, third about half the length of fourth and not much longer than wide, fourth elongate-subelliptic, not thin at the base, with an apical seta. *Prothorax* strongly convex, distinctly longer than wide; with three subbasal foveæ, a shallow one on each side, and a smaller but deeper one in middle; with dense punctures. *Elytra* strongly convex, not as long as wide, sides moderately rounded; dorsal

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\*I had the description of this species written out as new when fortunately I was enabled to examine the type (*Tyrus* of King). King's description is utterly misleading, as all he says of the third abdominal segment is "postice angulato"; and he omits any reference to the remarkable characters of the metasternum, although part of the less remarkable leg-armature is noted.



striae rather deep and wide, but terminated before middle; punctures much less distinct than on prothorax. Upper surface of *abdomen* with third segment slightly shorter than second, its middle strongly elevated and with a ridge tipped with short and somewhat golden setae, fourth with a large fovea on each side of middle, the middle itself strongly raised, with the elevated part flattened at its apex and tipped with somewhat golden setae; lower surface with third and fourth very short in middle, fifth flattened in middle, and sixth with a large median impression. *Metasternum* strongly convex; each side of middle with a strongly raised, slightly curved, truncated tubercle, with a minute tubercle half-way between its tip and the hind coxa. *Legs* long; front trochanters strongly and acutely dentate; femora moderately stout, the middle pair feebly dentate at basal third, the hind pair feebly dentate at the middle; tibiae thin and gently curved. Length 4 mm.

*Hab.*—N. S. Wales : Otford (A. M. Lea).

Readily distinguished from all other described species by its large size (it is, in fact, one of the largest of the *Pselaphidae*) and remarkable abdomen and pygidium. I have a vague idea that the specimen described was found in a nest of ants, but unfortunately kept no record as to this.

TYROMORPHUS QUADRIDENTATUS, n.sp.

Bright reddish-castaneous, appendages somewhat paler, but ninth and tenth joints of antennae and abdomen somewhat darker. Sparsely pubescent.

*Head* (excluding neck) distinctly transverse; with a puncture or very minute fovea close to each eye, and a moderately distinct interantennal depression. Eyes very conspicuous. Antennae moderately long, first joint cylindrical and as long as second to fourth combined, second slightly longer than third, the others to eighth (which is slightly transverse) gradually diminishing in length, ninth and tenth longer and wider, eleventh subovate, as long as eighth to tenth combined. Palpi with first joint stout and short, second rather strongly curved, with apical half inflated,



third not much longer than wide, fourth rather briefly subovate and tipped with a seta. *Prothorax* almost as long as wide, widest near apex, the sides thence rather gently decreasing in width to base, with a very shallow depression on each side near base, and with a small fovea in middle near base; almost impunctate. *Elytra* distinctly wider than long, apex much wider than base and gently incurved to middle; dorsal striæ rather wide on basal slope, but then narrowed and terminated before middle; almost impunctate. Upper surface of *abdomen* with second segment increasing in width from base to apex, slightly longer than third and fourth combined, but shorter than fifth, fourth scarcely one-third the length of third; lower surface very feebly convex along middle, apical segment depressed. *Metasternum* depressed along middle. *Legs* moderately long; front trochanters and front femora strongly and acutely dentate; tibiæ moderately curved. Length  $2-2\frac{1}{2}$  mm.

*Hab.*—Tasmania : Huon River, in tussocks; Launceston (A. M. Lea).

In many respects close to the description of *Tyrus spinosus*, but smaller; and head and prothorax of an almost uniform shade of colour (of colour, Westwood says "Niger, ...capitis facie antice picea, ...prothorace piceo; elytris sanguineis"). The prothorax is not wider than the head across the eyes, but really a trifle narrower. Westwood describes the antennæ as of ordinary form, but in the figure the basal joint is drawn as stouter, shorter and much less cylindrical than in the present species, which also has a small medio-basal prothoracic impression, that is neither mentioned nor figured in *T. spinosus*. *T. nitidus* has the front legs similarly armed, but is figured and described as having the abdomen produced in the middle and the tips of the antennæ different. It is closer to *T. laevis* than to any other species known to me, but the antennæ are wider, abdomen darker than head, and considerably wider than in that species.

I should have imagined the three specimens before me to be all males, but as Raffray has described the dentition of the legs in the female of *T. laevis*, it is possible that they are all female.

The apical dorsal segment of the abdomen is large, rounded at apex, and produced over the pygidium, which in consequence appears to be ventral. At a casual glance, the head, prothorax, and elytra appear to be glabrous; but, on close examination, fine sparse pubescence becomes visible; the elytra also are tipped with very fine and regular pubescence. From some directions a very vague longitudinal impression can be seen between the eyes.

TYROMORPHUS AURICOMUS, n.sp. (Plate xxi., fig. 9).

♂. Brownish-castaneous, sometimes almost piceous, appendages and part of elytra paler, palpi flavous. With moderately long pubescence on upper surface, denser on abdomen and tips of elytra than elsewhere; lower surface of abdomen with a conspicuous, more or less golden, fringe at extreme base.

*Head* distinctly transverse; with two round foveæ of moderate size slightly in advance of the eyes, and with a rather deep depression between the antennary ridges. Antennæ moderately long, first joint subcylindrical, slightly longer than second and third combined, third to eighth feebly and regularly diminishing in length, with the eighth distinctly transverse, ninth and tenth rather large and subquadrate, eleventh slightly longer than ninth and tenth combined, its apex distinctly curved. Palpi rather long, first joint very small, second almost as long as third and fourth combined, thin at base, with the apical half moderately inflated, third thin at base and regularly inflated to apex, fourth once and one-half the length of third, thin at the base, with the apical two-thirds elliptic-ovate, and tipped with a seta. *Prothorax* almost as long as wide, widest near apex, the sides thence gently decreasing in width to base; with a small deep fovea in middle near base, but without latero-basal foveæ; with small and rather sparse punctures. *Elytra* about three-fourths as long as wide, sides gently rounded, apex scarcely wider than across shoulders; dorsal striæ deep at base, and traceable to beyond the middle; with numerous rather distinct punctures. Upper surface of *abdomen* decreasing in width from base to apex, second segment longer than third, but shorter than fifth, third about once and

one-half the length of fifth; lower surface widely flattened along middle. *Metasternum* widely and gently concave in middle. *Legs* rather long; trochanters unarmed, tibiæ thin, the middle pair strongly spurred at apex. Length  $1\frac{4}{5}$ -2 mm.

♀. Differs in having somewhat shorter antennæ, the joints of the club smaller, and the apical joint ovate and not incurved at its tip; ventral segments not flattened along middle, metasternum less concave, and the legs somewhat shorter, with the middle tibiæ not spurred.

*Hab.*—Tasmania: Waratah, Ulverstone, Mount Wellington, Hobart (A. M. Lea).

Most of its punctures are small and inconspicuous, so that this species should probably be referred to Raffray's section of the genus "A1, Entirely smooth." At any rate the punctures are far less conspicuous than those of the other section known to me (*T. nigricornis*, *T. cribratus*, *T. Mastersi*, *T. dispar*). From the species belonging to A1, it differs from *T. levis* and the preceding in being rather densely pubescent on the upper surface; the apical joints of the antennæ are almost as figured in *T. nitidus*, but the abdomen is very different at the apex, and the legs are unarmed.

The elytra have the basal half more or less dark than the apical half, but the shades of colour are not sharply limited. One specimen has the abdomen almost black. The joints of the club are usually slighter darker than the rest of the antennæ. The curvature at the apex of the eleventh joint of the male is very pronounced from some directions, and its inner portion is somewhat concave. The head is described as transverse because its upper surface is certainly wider than long; but the lower surface, in consequence of the muzzle being lengthened, is longer than wide. Many specimens were obtained from moss, and one from fallen leaves.

#### TYROMORPHUS LÆVIS Raffr.

There is before me a female (from the Tweed River), the only sex described, that was returned by M. Raffray as *T. levis*; and as his type was originally received from me and from the Tweed River, this specimen can fairly be regarded as a cotype. In most

particulars it agrees with his description, but its head is darker than the rest of its body, and in fact is almost black; this, however, is probably an individual variation. Of the head, Raffray says:—"inter oculos foveis duabus"; on my specimen there are two minute interocular impressions. Of the prothorax he says, "fovea ante basali valida"; but, on my specimen, the fovea is decidedly small, and in other families of beetles would be regarded only as a puncture, and a rather small one at that. By an error in the table dealing with *T. levis*, the word "antennæ" is used instead of "palpi."

Mr. Carter has sent me a male, from Sydney, that appears to belong to the species; its head is no darker than the rest of its body, and the armature of its legs is as follows:—four front trochanters dentate, the teeth of about equal length, but more acute in the front than in the middle pair; front femora each with a small acute subbasal tooth, middle femora each with an obtuse subtriangular subbasal tooth; middle tibiæ subdentate about middle, and excavated thence to apex, with the apex itself produced into a long stout spur; front tibiæ each with a strong; obtuse apical spur. Its apical ventral segment is long, subtriangular, raised to apex, and with a feeble longitudinal impression.

HAMOTOPSIS AURICOMUS, n.sp.

Reddish-castaneous; suture and abdomen somewhat darker. Clothed with rather long and somewhat golden pubescence.

*Head* with dense and distinct punctures; a small deep fovea on each side, and rather closer to the eye than to each other, near middle of base with a very feeble impression, a distinct impression separating antennary ridges; a short obtuse ridge touching the lower side of each eye. Antennæ passing base of elytra, first joint not quite as long as second and third combined, sixth, seventh and eighth feebly transverse, ninth slightly larger and more transverse, tenth distinctly larger than ninth, eleventh much wider than tenth, and about as long as eighth to tenth combined, irregularly ovate or lopsided. Apical joint of palpi very large and highly polished. *Prothorax* slightly longer than

wide, widest across apical third, thence rapidly diminishing in width to apex, and rather feebly to base; with a distinct transverse impression at basal third, and with numerous partially concealed punctures. *Elytra* at base not much wider than prothorax at widest, but about twice the width near apex; sutural stria distinct; with four subfoveate impressions at base; punctures as on prothorax. *Under surface* with fairly numerous but more or less concealed punctures. *Legs* rather long and densely punctate; hind femora distinctly passing apex of abdomen. Length 3(vix) mm.

*Hab.*—Victoria: Hamilton(C. French).

Differs from *H. Australasie* in being larger, foveæ of head smaller and deeper, portion of head in front of antennæ more produced, apical joint of palpi larger, more bean-shaped and without apical seta, tenth joint of antennæ decidedly transverse and distinctly wider than ninth, legs longer(in *H. Australasie* the hind femora, at least in the female, terminate some distance before apex of abdomen; in the present species they distinctly pass it) and clothing(of both surfaces and legs) denser, longer and more golden. The only specimen\* before me, is of the same sex as a cotype of *H. Australasie*, stated by M. Raffray to be a female.

#### RYTUS KINGI, n.sp.

♂. Reddish-castaneous, legs and antennæ paler, tarsi and palpi almost flavous. With moderately short pale pubescence.

*Head* with a deep curved impression between eyes, each side marked by a few stiff setæ; in front of impression with a transverse ridge, and then again depressed; with distinct punctures. Antennæ rather long, passing base of prothorax, second to eighth joints subequal in length and width, ninth slightly longer and wider, tenth wider than ninth but not longer, eleventh subovate, almost as long as the three preceding combined. Palpi with first

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\*Since this was written, Mr. Kershaw, of the National Museum, sent for examination two males of this species, also from Hamilton and Mr. French's Collection. They appear to differ only in having the front trochanters each armed with a distinct and rather sharp spur.

joint concealed, second about as long as the width across eyes, basal half thin and apical half dilated, third about half the length of second, the extreme base thin but the rest as thick as the dilated part of second, fourth about the length of second, and much the same shape, except that the dilated portion is basal instead of apical. *Prothorax* strongly convex, wider than long, sides strongly rounded and widest close to apex; with a shallow fovea on each side at base; with fairly distinct punctures. *Elytra* distinctly wider than long, sides and shoulders strongly rounded; with four small basal foveæ; dorsal striæ deep at base but terminated at basal third; with numerous distinct and, for the family, rather coarse punctures. *Metasternum* with a strong, subquadrate, apical depression. *Abdomen* somewhat flattened along middle of undersurface. *Legs* long; middle trochanters acutely dentate; tibiæ moderately curved. Length  $1\frac{1}{4}$ - $1\frac{1}{2}$  mm.

♀. Differs in having the head without setæ, without the strong transverse impression, but with a shallow impression on each side behind base of antennæ, and one between them, antennæ somewhat shorter, metasternum less impressed posteriorly, abdomen not flattened along middle, and legs shorter, with the middle trochanters unarmed and the tibiæ less curved.

*Hab.*—New South Wales: National Park, Ourimbah (at both places under rotting leaves), Sydney, Otford (A. M. Lea), National Park (H. J. Carter).

The head conspicuously transversely impressed distinguishes from *R. subulatus*, and metasternum impunctate in middle instead of with comparatively coarse punctures;\* the general punctures are also smaller, although still conspicuous, and the palpi are rather stouter. In some respects close to the description of *R. corniger*, but head without "two thick setæ projecting like horns from between the antennæ." Raffray described the head of *R. porcellus* (the species he supposed to be *R. corniger*) as bearing "two strong and short brushes of yellow hairs."

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\* A character omitted from the original description, but of which I can be certain, having a cotype from Dunheved.

From each side of the head the male appears to be deeply notched above the eye, with a conical tubercle in front of the notch. The fifth joint of antennæ is slightly longer than any of the three in front of or behind it, but the difference is not very pronounced.

*SCHISTODACTYLUS BREVIPENNIS*, n.sp. (Plate xxi., fig.10).

♂. Pale brownish-castaneous, appendages paler. Moderately clothed with short pale pubescence.

*Head*(excluding neck) feebly transverse, with two small and shallow interocular foveæ; with dense clearly defined punctures. Antennæ long, passing middle coxæ, first joint cylindrical, longer than second and third combined, second longer than third, the others to seventh feebly decreasing in size, eighth slightly wider, ninth slightly longer and distinctly wider than eighth, tenth slightly wider than ninth, eleventh subovate, longer than ninth and tenth combined. *Prothorax* about as long as greatest width, which is near apex, sides thence regularly decreasing in width to base; non-foveate; punctures as on head. *Elytra* very short, strongly dilated from base to apex; subsutural stria on each commencing in a feeble fovea, and regular to apex; the dorsal stria also commencing in a feeble fovea, distinct to beyond the middle, and traceable almost to apex; punctures almost as on prothorax. *Abdomen* almost twice the length of elytra, and about middle much wider; second segment largest of all; with small dense punctures; under surface feebly convex along middle, the sub-apical segment with a small fovea. *Metasternum* impressed along middle; with fairly distinct punctures. Front *trochanters* each with a long thin tooth or spine; femora stout, the front ones each with a tooth as its trochanter; tibiæ thin, apex curved; tarsi with basal joint short, second much longer, third about the length of second, commencing close to its base, instead of from its apex, and terminated by two small claws. Length  $1\frac{1}{2}$ ·2 $\frac{1}{6}$  mm.

*Hab.*—Tasmania: New Norfolk, in tussocks; Launceston, Waratah(A. M. Lea).



Readily distinguished from *L. phantasma* by the palpi; in Raffray's figures\* the apical joint is obtuse and simple at tip, and with a long recurved spine from the middle; in the present species the apical joint is terminated by a thin spine and a fine seta, whilst the recurved spine is basal, and, as also the spine on the subapical joint, curves forward instead of backward; the two spines on the subbasal joint are unequal in length, with the longer one about the length of the one on the subapical joint. The species also differs from Raffray's description in not being glabrous, in the eleventh joint of antennæ paler than the preceding ones, or the club at least unicolorous with the rest of the antennæ, elytra with the subsutural stria regular throughout, and the dorsal one continued beyond middle.

The tarsi of this genus are very peculiar, but Raffray may have been mistaken in describing and figuring them as terminated by single claws. At any rate in the present species some of the tarsi (of the four specimens before me) appear to be each terminated by a single claw, but this is probably due to gum, as on others there are quite distinctly two very fine claws. The second joint appears to have a groove into which the third is capable of being partially received.

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#### EXPLANATION OF PLATE XXI.

- Fig. 1.—*Sagola Tasmanica* Lea.  
Fig. 2.—*Batrisodes gibbicollis* Lea.  
Fig. 3.—*Rybaxis acanthosterna* Lea.  
Fig. 4.—*R. macrocephala* Lea.  
Fig. 5.—*Otenisophus longicornis* Lea.  
Fig. 6.—*Narcodes nigriventris* Lea.  
Fig. 7.—*Palimbolus elegans* Lea.  
Fig. 8.—*Tyromorphus speciosus* King.  
Fig. 9.—*T. auricomus* Lea.  
Fig. 10.—*Schistodactylus brevipennis* Lea.

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\*Rev. d'Ent., 1883, Plate v., figs. 20-21.